SELF EVALUATION VARIABLES AND SOCIAL MEDIA

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Abstract

People are motivated to self evaluate and undertake this in their interactions with others. Interactions with others are increasingly taking place online, including via social networking websites, which can contain several differences to face to face interaction. This thesis examined how specific self-evaluation factors (self-esteem, social comparison tendency and self-concept clarity) affect various behaviours on and psychological outcomes of engaging with social media sites, including Facebook. Self-esteem predicted positive mood during Facebook use, whilst one's relationship with the site (i.e. how emotionally connected to the site one is – or 'Facebook intensity') predicted engagement with activities interpreted as indicative of a 'fear-of-missing-out' (e.g. finding out what friends were up to). High scorers in performance and appearance self-esteem reported a positive mood shift after profile editing whilst low scoring counterparts reported the reverse. Those who compared to others frequently experienced a negative mood shift after viewing the Facebook newsfeed possibly reflecting the cognitive effort associated with social comparison. Self-esteem predicted use of positive emotions in status updates whilst number of Facebook friends was negatively predicted by self-concept clarity and positively by social comparison tendency. Participants textually described both their actual and ideal self enabling consideration of the implications for self-presentation attempts in certain online environments. Low self-esteem individuals decreased their use of anxious language when idealising the self whilst those with low self-concept clarity increased their use of positive emotions. The discrepant word count between actual and ideal selves suggested that the actual self appeared more easily articulated, most

pronounced amongst those who infrequently compared themselves to others. When others rated these self descriptions it appeared high scorers in self-esteem and self-concept clarity and those who compared frequently to others were generally most positively received. It appears that whilst those with unclear self-concepts and low self-esteem can present a more positive and less anxious idealised self than actual self, the overall thesis findings appear to support the rich-get-richer hypothesis (Valkenburg, Schouten, & Peter, 2005) with high scorers on these self-evaluation factors garnering the most benefits from social media. Whilst those who compare frequently may be adversely impacted by viewing the Facebook newsfeed, idealisation of self attributes appears to benefit these individuals in terms of positivity of impressions formed by others. Findings suggest that social media engagement may hold advantages and disadvantages for users dependent on the type of activity engaged with and the individual differences variables of the user.

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Chapter one: Introduction to thesis

1.1 Introduction

Individuals are motivated to self-evaluate (Sedikides & Strube, 1997), which can be informed by comparisons with others. Individuals vary in the extent to which they use other people to self-evaluate (social comparison) and this is related to other self-evaluation factors including self-esteem (Gibbons & Buunk, 1999) and clarity of the self-concept (Butzer & Kuiper, 2006). Individuals' self views inform what they feel and do (Swann, Chang-Schneider & Angulo, 2007), they inform interactions with others and in turn these interactions inform such self views. Interactions with others are increasingly being held on social networking websites, such as Facebook, Pinterest, Instagram, Tumbler, Twitter to name a few (Statista, 2017), with the most popular being Facebook (Duggan et al., 2015). Despite continued research into the area, a comprehensive picture is still lacking of how these self-evaluation variables relate to engagement with social media including Facebook, such as user preferences for site feature use and psychological outcomes of feature use. Whilst individuals are motivated to self-evaluate they also attempt to manage the impressions others form of them. Impression management forms part of everyday life for individuals and their interactions with others and again this is increasingly taking place online including via social media sites.

Whilst Facebook remains a hugely popular social networking website (Duggan et al., 2015) it is not the only one. Sites differ in the extent to which they enable the presentation of idealised features of the self, with some sites offering a high degree of offline and offline similarity in choice of interaction

partners (including Facebook) meaning individuals may have less freedom of expression of an idealised self compared to social media sites which are less anchored to the offline social network, and which may permit more creativity of self presentation. Subsequently the amount of flexibility in managing a self presentation may vary between different types of social media with implications for impression management and indeed subsequent impressions formed by others based on these. Further it is anticipated that individual differences in self-evaluation variables may also have a role in both the impression management attempts employed by individuals across social media and the subsequent impressions others form of these individuals.

1.2 Rationale for thesis

Individuals' interactions with others are increasingly being held in online settings. Some social media sites which are more nonymous (Zhao Grasmuck, & Martin, 2008), such as Facebook, operate as something of a halfway house permitting an amount of optimal self presentation whilst maintaining continuity with the offline self. More anonymous social media more closely resembles Internet Relay Chat rooms where individuals could, if they choose, interact with others without disclosing their identities directly; as such interaction partners are more anonymous and less identifiable.

More nonymous social media sites permit the creation of an online social network which largely reconstitutes the offline social network (Amichai-Hamburger, Kaplan & Dorpatcheon, 2008). In contrast more anonymous social media may not require any overly identifying information if the user decides not to portray it. Further, types of social media which are less linked to the offline

persona also operate as an online interaction tool but have received less research interest than their nonymous social media counterparts.

Research has considered to an extent how individual differences in self-evaluation variables (self-esteem in particular) predict types of self presentational style on anchored social media such as Facebook, suggesting that low and high self-esteem individuals differ in their choice of self presentational style on the site. For example research has noted that low self-esteem individuals are more likely to view content (Tazghini & Siedlecki, 2013) whilst high self-esteem individuals are more likely to post comments (Wang et al., 2012). Tazghini and Siedlecki suggest that differences in these types of Facebook behaviours may reflect the fact that those with low self-esteem are less comfortable posting information about themselves in such a public manner, whilst Wang et al. suggest those with high self-esteem perceive their opinions to be valuable and so may therefore be more likely to post comments on social networking sites.

However research has only recently begun to consider Facebook as a series of applications and activities to engage with and the extent to which self-evaluation variables predict this. That is, whilst for a time researchers regarded Facebook as a single application, there is increasing emphasis placed on the fact that within that same application individuals can engage in a variety of activities, (cf Smock, 2011) such as one-to-many communication (commenting) editing the Facebook profile, reading the Facebook newsfeed or instant messaging friends to name but a few. Analysing different facets of this online social networking experience in a more detailed and comprehensive way

enables a more integrated analysis and may therefore provide more revealing information about experiences of users and how self-evaluation variables may predict this. Subsequently increasing an understanding of how self-evaluation factors might predict the different ways people engage with social media may therefore provide insights into the various affordances of this technology and how different personality types may exploit it to suit their own needs.

Whilst self-esteem has received research interest, social comparison tendency and in particular self-concept clarity have received little research attention. A more integrated approach considering this range of self-evaluation variables on the different applications within Facebook will provide a more comprehensive analysis than has previously been conducted. Consideration of the extent to which social media sites permit a self presentation which can be idealised and deviate from the offline persona will also be examined in terms of impression management and subsequent impression formation and the contribution of individual differences in self-evaluation variables will also take place.

This thesis will further research self-evaluation variables to help understand why users might engage with social media in unique, individually-driven ways. The findings will assist in interpreting the relative merits and less positive consequences of social media use which will be of interest to both academics and users of social media.

1.3 Research aims and objectives

The thesis is spread over four different research phases. Each phase is formed of a specific research question or series of hypotheses to be tested. The chosen

methodology intends to elicit a more comprehensive analysis of social media engagement and the contribution of self-evaluation variables than has been undertaken in research to date.

1.3.1 Phase one

The first phase of research focuses on how individual differences in self-evaluation variables may predict the different types of site features that users engage with on Facebook. The study will also assess the extent to which these self-evaluation features affect one's mood state during engagement with the site. In addition, one's emotional attachment to Facebook ('Facebook intensity') will be measured as a factor for predicting site feature preferences. Whilst research has examined self-esteem in relation to Facebook use, for example the idea that the poor might get richer (Poley & Luo, 2012) and the rich may get richer (Valkenburg, Schouten & Peter, 2005) for example in terms of social competence, (Valkenburg, Schouten, & Peter, 2005); a comprehensive analysis of the types of Facebook activities individuals engage in over a period of time and the extent to which a wide range of self-evaluation variables predict both this and mood during site use has largely been overlooked. This phase represents a more comprehensive analysis of the types of activities individuals engage with on the social networking site Facebook and the predictive value of a range of self-evaluation factors. It also considers the implications for use of social networking sites considering how individuals may differ in mood during spending time on the site and the contribution of the individuals' intensity of Facebook use. The aim of the first phase of research therefore is to provide a more comprehensive picture of how self-evaluation

variables predict engagement with Facebook features, and the role of Facebook intensity. This examination takes place over a period of days via use of a specifically designed daily diary.

1.3.2 Phase two

Phase two uses an experimental design where participants' mood is assessed, they then engage in one of three Internet tasks and mood is then reassessed. The tasks involved reading the Facebook newsfeed, editing the Facebook profile and a control task of randomly surfing the Internet (excluding social networking websites). An analysis of state (or short term) self-esteem is also included examining performance, appearance and social based self-esteem. Research has occasionally used state self-esteem in similar contexts but has typically used a sum of state self-esteem (see Vogel et al., 2014). It is anticipated that using the separate constituent parts of state self-esteem will permit a more revealing analysis of how types of self-esteem influence mood after engagement with specific types of social media activities. Previous research has considered the different types of social media engagement within Facebook to a degree, (see Sagioglou & Greitemeyer, 2014) but there are no reports considering the differences between activities where individuals can self present and where individuals may observe the content of others, or conduct a before and after measure of mood or self-esteem (such as Gentile et al., 2012; Gonzales & Hancock, 2011). This phase permits a study of mood change after engagement with specific Facebook activities, dividing out activities on Facebook which permit individuals to self present or to view the content of others, since it is anticipated that this difference in type of activity will have

implications on affect. The aim of the second research phase therefore is to consider the impact on mood engagement with specific Facebook activities may have: Specifically those activities which enable a degree of optimal self presentation (editing the Facebook profile) and those which enable exposure to social comparison information about others (viewing the Facebook newsfeed). It aims to consider the role of state (or short term) self-esteem in this process as well as tendency for social comparison.

1.3.3 Phase Three

Phase three is the final Facebook based phase. It uses a content analysis approach, studying content posted on Facebook, by taking samples of Facebook content from genuine Facebook profiles rather than simulated profiles. The phase looks to see how self-evaluation variables of self-esteem, clarity of self-concept and tendency to social comparison predict the way individuals present themselves on Facebook. This type of self presentation is measured in a variety of ways including length of status updates and types of words used. Research has considered in a limited way the way individuals self present on Facebook (Bazarova et al., 2012; Bareket-Bojmel, Moran, & Shahar, 2016) however individual differences variables are generally limited to the role of personality (Amichai-Hamburger & Vinitzky, 2010; Moore & McElroy, 2012;) or personality and self-esteem (Kramer & Winter 2008). Despite offline research linking clarity of the self-concept and extent to which an individual compares to others to self-esteem (Butzer & Kuiper, 2006, Campbell, 1990) their contribution to manner of textual self presentation on Facebook appears to have encountered a dearth of research attention. In addition research of this nature typically examines visual

markers in relation to Facebook use (e.g. the use of pictures) rather than textual self presentation (e.g. Hum et al., 2011; Eftekhar, Fullwood & Morris, 2014). Further, research has previously suggested that individuals are poor at identifying accurately the types of activities they engage with on Facebook (Sagioglou & Greitemeyer, 2014) therefore the analysis of actual Facebook content removes the self report element. This phase therefore aims to examine how self-evaluation variables relate to textual self presentation and other impression management attempts on Facebook via examination of actual Facebook content. It is anticipated that if the manner of self presenting on Facebook differs amongst those low and high in such variables (e.g. self-esteem) it may be that this self presentational content impacts upon the way other individuals perceive and interact with them, and this may in turn colour their own experience of Facebook interaction. This may therefore assist in the interpretation of any effects found in the earlier two Facebook studies around mood and Facebook use.

1.3.4 Phase Four

Phase Four is formed of two parts, which acknowledge the existence of other social media sites beside Facebook. It notes how different sites offer varying amounts of creativity to deviate from the actual self and to gain greater flexibility in the presentation of self, this might include for example anchored social media compared to more anonymous social media less tethered to the offline self. Research has considered in a limited way the manner in which self-evaluation variables predict style of engagement on anchored social media such as Facebook (Wang et al., 2012; Tazghini & Siedlecki, 2013; Lee,

2014) but there is a dearth of research surrounding these variables in the context of social media less anchored to the offline persona. Phase four therefore acknowledges that social media sites differ in the extent to which individuals can display an idealised self presentation, and within the first phase considers the extent to which self-evaluation variables influence these impression management tactics.

The aim of the first section therefore is to compare the textual self presentation of the actual self to the way individuals textually describe the ideal self, via the transcribing of an 'about me' section of a social media profile by participants, and to also ascertain if language use varies dependent on individual differences in self-evaluation variables. The aim is therefore to establish the different types of language individuals may use when describing the actual self and see how this differs to language describing the ideal self and to ascertain how individual differences in self-evaluation variables may affect this. The aim is to transpose these findings to consider implications for how individuals may be able to self present in differing online environments and the role of their self-evaluation variables in these processes.

The latter part of the fourth phase takes a sample of these about me profiles and examines the types of impressions others form of profile holders when the profile holder has textually described the actual self and the ideal self, and the extent to which the self-evaluation variables of the profile holder influence impressions formed of that profile holder. Research has considered to an extent the types of impression individuals form of others on social media, with suggestions that the content of status updates of those with low self-

esteem are both more negative than those with high self-esteem and more negatively received by raters (Forest & Wood, 2011). This will extend the previous research to consider how self presentational style is influenced by a range of self-evaluation variables and how this differs between different types of social media, specifically those which may enable a greater degree of flexibility around self presentation versus those where self presentation may be limited to presentation of the actual self.

The aim of the final study therefore is to examine how self descriptions are perceived by others, by asking others to rate their first impressions of the profile holder that they read about. This intends to enable extrapolation of how individuals high and low in the self-evaluation variables of interest throughout this thesis may influence the impressions others form of them and how this might differ dependent on the type of self presented.

1.3.5 Summary of aims

In summary the thesis aims to examine:

- How self-evaluation variables and Facebook intensity predict the activities individuals' engage with on Facebook and mood during site use.
- How self-evaluation variables influence mood after engagement with specific Facebook activities.
- How self-evaluation variables predict textual self presentation and impression management on Facebook.
- The role of self-evaluation variables in textual self presentation of actual and ideal selves via an about me profile, and how these self-evaluation

variables may influence how such self presentations (about me profiles) are received by others, considering the implications for online interactions.

1.4 Chapter structure

The thesis is split into eight chapters. A brief outline of the contents of each chapter is provided herein for ease of navigation and to clarify the structure of the thesis.

Chapters 1 and 2 explain the background to the thesis. Chapter 2 consists of the literature review which outlines background research into self-evaluations including social comparison tendency, self-esteem and self-concept clarity, and considers how individuals attempt to influence the impressions others form of them. Impression management is considered in the context of the online world with particular consideration to nonymous social media such as Facebook and those sites where comparatively increased flexibility and creativity of self presentation may be enabled.

Chapters 3 to 5 consider how self-evaluation variables relate to Facebook activity. Chapter 3 considers how self-evaluation variables and intensity of Facebook use predict Facebook behaviour of choice and mood during use, whilst Chapter 4 takes an experimental slant examining self-evaluation variables and mood change after specific Facebook activity. Chapter 5 examines real Facebook content and considers the extent to which self-evaluation variables predict self presentational style on Facebook.

Chapter 6 moves forward to consider the types of language used when textually describing the actual self, and comparing this to a textual description of the ideal self, relating this to social media engagement from the perspective of impression management followed by impression formation in Chapter 7. Chapter 6 outlines a study examining how variations in self-esteem, clarity of self-concept and tendency to compare to others influence the way individuals textually describe the actual self and how this compares to the way they describe the ideal self. This is on the premise that some online environments enable more idealisation of self attributes than others and more flexibility of self presentation, and as such comparing how individuals describe their actual self to their ideal self and how their self-evaluation variables influence this holds implications for interactions in certain online environments.

Chapter 7 focuses on impression formation, outlining a study considering how self-evaluation variables of profile holders may influence the impressions others form of them and how the impression formed might differ dependent on whether the individual is presenting an actual or idealised self, again extrapolating this from this to consider implications for interactions within certain online environments.

Chapter 8 includes the final discussion and summary of the research conducted; it also outlines the implications of the research conducted and poses suggestions for further research endeavours.

Chapter 2: Literature review

2.1 Self-evaluations

The perceptions an individual holds of themselves can broadly speaking be defined as the self-concept (Shavelson, Hubner & Stanton, 1976; Dembo, 1994); and in the following sections will be considered in relation to the offline self. The self-concept can be regarded as a series of cognitive structures which include aspects around content, attitudes and evaluative judgements, used to interpret the world, the goals of the self and protect self worth (Oyserman & Markus, 1998). There is suggestion that it may stem from a variety of sources. Whilst James (1890) proposed that the self-concept was the result of social comparison with others, Cooley (1902) suggested that the self-concept developed as a result of feedback from others. Building on this idea Mead (1934) suggested that it is via the interaction with others that the self-concept is formed, including interactions with other people and with societal norms and consideration of one's own personal values.

The self-concept itself is said to be formulated of the various identities individuals hold, including the traits and characteristics associated with the individual, relationships with others and members of particular social groups (Oyserman, 2004). Adolescence in particular is said to be the period of life in which the self-concept becomes more integrated and developed (Sebastian, Burnett, and Blakemore, 2008). It would appear then that this integration involves fitting together various beliefs about the self, and that the self is constructed and developed via social interaction. Research has built upon the idea of the social nature of the self, and has suggested that individuals are

driven to self-evaluate, and that this evaluating of the self is both socially negotiated and modified (Sedikides & Strube, 1997). This desire to evaluate the self is reportedly a universal human endeavour (Wayment & Taylor, 1995) involving the collecting and maintaining of relevant self knowledge (Leonardelli, Lakin & Arkin, 2007). These attempts are arguably an essential undertaking for individuals (Taylor, Wayment, Neter & Woo, 1994) not least because individuals' self views influence what they think, feel and do (Swann, Chang-Schneider & Angulo, 2007).

It has been proposed that individuals hold a variety of motivations to self-evaluate, including self improvement, self enhancement, self verification and self assessment (Sedikides & Strube, 1997). Self verification as a motive for self-evaluation refers to the fact that individuals reportedly desire stability of self views in order to make the social world more coherent and predictable, (Swann 1990). As such individuals act to self verify because they wish others to see the self as they do, and this desire exists even if this self view is negative (Swann, 2012).That is, when self verification is a motive of self-evaluation, individuals seek confirmation of existing self beliefs, even if this action confirms a negative self image. However, individuals also at times wish to self-enhance, to feel more positively about the self, and this may motivate self-evaluation (Sedikides & Strube, 1997). The emphasis of self-evaluation here involving the rejection of negative information and instead a search for positive information about the self is therefore the purpose of the self enhancement motive (Luke & Stopa, 2009). In this instance then the focus appears to be on promoting

positive feelings about the self, and the search for information to enable this view.

An alternative motive for self-evaluation is that of self improvement, evaluating the self with emphasis on how to improve self aspects (Sedikides & Strube, 1997) such as the ability at a certain sport for example. This motive is notably different to self enhancement, with the emphasis here being on how to improve the self, rather than how to feel better about the self (Sedikides & Strube, 1997). Similarly, a further motive of self-evaluation is that of accurate self-evaluation, that is, to ensure that self views are accurate, and once again this motive may not be self enhancing, but aims to establish an accurate self perception. The motives for choice of style of self-evaluation may therefore be motivated by how changeable an area of self knowledge is, as noted by Dunning, (1995). As such an individual may be motivated to self-evaluate with an emphasis on self enhancement if the area under consideration is one which is difficult to change. It is suggested that to evaluate self aspects in this way is almost impossible to achieve without considering feedback in how one is managing in relation to achieving goals, or how one is doing compared to or relative to others (Taylor, Wayment, Neter & Woo, 1994).

2.1.1 Festinger's theory of social comparison

The idea of self-evaluations being informed in the context of others is not new. A wide variety of self theorists have considered the idea that other people (cf Cooley 1902) as well as the wider social environment (cf Mead 1934) inform individuals' self-evaluations. However, it was Festinger (1954) who first formed

a coherent theory of self-evaluation in the context of social comparison processes, that is, the act of comparing the self to others. Considering evaluation of opinions and of abilities, it was proposed that individuals are motivated to compare the self to others. Via a series of hypotheses, derivations and corollaries he proposed that individuals' desire accuracy in self-evaluations. The hypotheses can be summarised as follows. It was proposed firstly that individuals have an innate drive to evaluate the self, and for preference will obtain these via objective standards, or non-social sources of information (Hypothesis 1). These objective standards are based on impartial rather than social information. For example, an individual may judge if they are strong enough to lift a heavy weight by actually attempting to do so. However Festinger himself noted that these objective standards are not always preferable and not always available. Festinger gave the example of the once widely held belief (or opinion) that tomatoes were poisonous. In this instance testing the accuracy of this opinion directly – by eating the fruit would be unwise. When considering the evaluation of abilities, such as when evaluating one's ability to play chess, this is only meaningfully evaluated when comparing to someone else's ability, and the most accurate form of this comparison would be someone similar to the self (Festinger, 1954). It was therefore proposed that in the absence of appropriate objective standards individuals will use others for the purpose of ensuring self-evaluations are accurate (Hypothesis 2).

Festinger suggested that people who are similar to the self on the comparison dimension are most likely to be used for social comparison, since individuals who are too different lead to inaccuracies in social comparison

interpretation (Hypothesis 3 and corollary). Others are also reported to be useful if they are similar on attributes related to the social comparison dimension, be that in terms of abilities or opinions (Hypothesis 8). Whilst opinion and ability evaluations may both be resolved by comparison with others, as Gibbons and Buunk (1999) noted, these two dimensions require different means of thinking: Whilst ability evaluation primarily asks 'what am I able to do?' evaluation of opinions instead asks 'what should I think' (Gibbons & Buunk 1999). They also differ in the ways that the evaluation of these two areas can be acted on. It was suggested that opinions are more easily changeable than abilities, and that various self and non social issues prevent the improvement of ability with the same ease as changes in opinion (Hypothesis 5). For example, whilst a person may wish to be able to achieve a faster running time, even with high levels of motivation, it may be difficult to achieve this change. Indeed, Festinger stated that changing an opinion is easier than changing an ability: Whilst efforts may be made to increase an ability such as intelligence for example by studying hard, there is no guarantee that this will act to increase intelligence, and, if in fact ability in this domain is increased (one becomes more intelligent) it is a process which takes far longer to achieve than changing an opinion.

Festinger also proposed that there existed a unidirectional drive upward which existed for abilities, but was mostly absent in terms of opinions (Hypothesis 4) representing a second difference between responses to evaluations of abilities and of opinions. This unidirectional drive upward refers to the desire to improve and better the self (e.g. improve poetry writing or running). The fact that this

exists primarily only in relation to abilities was reportedly since no opinion is greater or better than any other, but rather has the perception of feeling correct and valid or not, and further that agreement of opinion permits group satisfaction (therefore encouraging pressure towards uniformity when evaluating an opinion in relation to others;) but when considering abilities there exists a drive upward – to improve (Festinger, 1954). Therefore when evaluating an ability, it appears the ultimate outcome is not to become the same as others, but to be better than them.

The remaining hypotheses considered further the consequences of social comparison. It was argued that when individuals cease to compare to another person, hostility or derogation of that individual will occur, such that choosing to compare to them again would be unhelpful (Hypothesis 6). Where comparison with a group is of great importance or relevance for the evaluation of an ability or an opinion the individual will perceive pressure to achieve uniformity with the group (to be like the others in the group (Hypothesis 7 and corollaries). Finally if within a group there exists a range of abilities or opinions those who are closest to the mode or most common opinion will be those most likely to be able to elicit change in the opinion of others, and also be less likely to change their own opinion to that of others in the group, whilst those further from the group mode will be more likely to change their position to the mode (Hypothesis 9).

Festinger (1954) cited a range of research data to tentatively support the concepts, including work by Festinger, Torrey, and Wilierman (1954). Participants in groups of four completed tests to measure an ability perceived

as important to these individuals, yoked so that one participant scored lower than the others, whilst the remaining three scored equally well in their performance. Those who perceived a high level of attraction to the group who scored lower than the others, perceived their performance as worse than those who did not feel the same level of group attraction. When those who held a high level of group attraction scored equally to others within the group, they felt their achievement was greater than similar others who were not as attracted to the group did. As such, those who felt a high level of attraction to the group felt more inadequate when scoring less well than the others, and felt higher sense of adequacy when scoring as well as the other group members, compared to those who perceived the group as less attractive, and was seen as support of the Hypothesis 7 corollary.

Festinger also cited support, in this instance of the Hypothesis 3 corollary, in the form of a PhD thesis by Dreyer, (1953). A group of high school pupils were yoked to score far above average, about average or far below the average for boys similar to themselves. When asked how well they felt they had done on the test, with a choice of 5 answers from 'very poor', 'poor', 'fair', 'good' or 'very good', those who scored either far below the average or high above it both gave the response of 'fair' performance, and were significantly more likely to report this than those who had received average scores. Those who had scored averagely also reported that they had done better on the test than did those who scored far above the average felt they had. This was suggested to support the corollary that individuals choosing others less similar to the self will be less accurate in their interpretation of such comparison.

Finally Festinger cited Hoffman, Festinger and Lawrence (1954) as evidence supportive of Hypothesis 8 - that individuals will choose others similar to the self on attributes related to the comparison dimension. Participants were tested in groups of three and told that they had been chosen to work together as they were perceived to be of similar intelligence levels. Other groups also worked in threes, but two within the group of three were led to believe the third person was of superior intelligence. In the first group (the similar group) this group continued to compete against another participant even when the participant scored above them in the experiment. In the latter group (where a superior other was purportedly based) the group competed less with another participant and instead competed more with each other. This was reportedly evidence of them perceiving the superior other as too different (more intelligent) from the self and so not seen as a useful source of comparison.

2.1.2 Later developments in social comparison theory

Studies which followed initially employed the rank order paradigm, where individuals are given a 'score' on a test and the option to view the score of another participant of their choosing. This was regarded as evidence of whether a preference existed to compare upward (to a superior other) to compare downward (to a dissimilar other) or to compare to someone who scored within a similar level to the self (lateral comparison). Theorists began to consider alternative motivations for social comparison besides the originally proposed accurate self-evaluation. For example, self enhancement; in other words to enhance positive self views and decrease negative attributes of self-concept

(Sedikides & Strube, 1997) was considered by early theorists as an alternative explanation to social comparison (e.g. Thornton & Arrowood, 1966; Hakmiller, 1966).

Thornton and Arrowood (1966) proposed two motivations for social comparison when the dimension is ability – self-evaluation and self enhancement. In this sense self enhancement was proposed via affiliation with those better off than the self, that is, via an upward comparison. In contrast Hakmiller (1966) proposed self enhancement would take place via comparison with those worse off than the self (via a downward comparison). Hakmiller's findings suggested that in high threat situations individuals will compare downward with the person most dissimilar to themselves compared to individuals in the low threat experimental condition. Hakmiller (1966) suggested that this could be interpreted as supportive of the notion that, under conditions of threat, individuals will choose a dissimilar other over a similar other to reassert an individual's self regard. These perceptions of self enhancement as a motive for social comparison were built on to form the downward comparison theory (Wills, 1981), which emphasised how downward comparisons can be used for the process of self enhancement.

Gradually research moved into the field and more naturalistic methods with increasing emphasis on the cognitive nature of social comparison. Collins (1996) reviewed literature on social comparisons and maintained that when comparing upward, assimilation or contrast to the comparison other may occur, and that this may explain the differences between affective responses to upward comparison, suggesting it is not the direction of comparison that is

important but the cognitive appraisals which take place within this comparison. Where individuals assimilate, or see themselves as similar to the comparison other, positive effects are associated with comparison, however, if the upward comparison leads to perceptions of a large difference between the self and the comparison other this contrast effect can lead to the negative emotional consequences which are sometimes associated with social comparison (Collins, 1996).

Similarly Taylor, Wood and Lichtman, (1983) considered the cognitive nature of social comparison, evaluating literature surrounding the way victims respond to victimisation and suggested that there are a number of ways individuals selectively evaluate their life situations, which appear to suggest individuals actively seek out downward social comparisons. The five ways they considered included the use of downward comparison, selectively attending to aspects of the self which would permit one to regard oneself as doing well, the use of hypothetical worse off states to evaluate from, constructing a perception of benefit from the experience, and finally creating perceptions that the way one subsequently adjusted to the experience is exceptional to those of others.

To elaborate then, the first way that individuals may selectively evaluate their life situations according to Taylor et al., (1983), is via 'social comparisons with less fortunate others'. It was noted that contrary to expectation, the majority of the female cancer patients interviewed by the experimenters believed that they were coping with their illness better than other patients, representing a downward comparison. These patients also chose to focus on comparison dimensions where they appeared more advantaged to others, for example,

lumpectomy patients comparing themselves to those who had undergone a mastectomy. Thus illustrating that downward comparisons are always possible if the comparison dimension is specially selected, therefore illustrating how individuals spend time selectively focusing on attributes which make the individual appear advantaged.

Individuals were also seen to continue in this vein in the second method of selective evaluation, via the 'creation of hypothetical worse worlds', where participants outlined a consideration of how the situation could have been worse. Participants often explained how their own illness was not as severe as it could have been, that they may have for example endured a much longer more drawn out period of illness. Individuals also frequently engaged in the process of 'construing benefit from the victimizing event', which involved thinking of ways which the individual benefited from adverse circumstances, and reconstructing the event to reveal unexpected benefits. The final way noted by Taylor et al., (1983) that individuals employ is the 'manufacture of normative standards of adjustment'. This strategy acknowledges the victimisation but focuses instead on how the adjustment of the self is superior to that of others, often achieved by creating fictional others with which to compare. It would seem then that these five ways illustrate how individuals may emphasise the small amounts of negative impact an event holds, to highlight the gains of which the experience provided, and to maintain superior coping ability within the situation, suggesting that social comparison is a highly cognitive process.

Further, Kruglanski and Mayseless (1990) conducted a 'conceptual analysis' of social comparison issues, and concluded that to suggest that individuals seek accurate self-evaluation via comparison with similar others is unlikely to be the case, and that a range of factors relating to human judgement are relevant, including motivations, personality and cultural factors. They suggest therefore that whilst the process of social comparison across different domains is a uniform process, it is informed by various individual differences, and more complicated than original propositions of the theory.

The original theory of social comparison therefore proposed that the motive for comparison was to gain accuracy in self-evaluations (Festinger, 1954). Later research suggested alternative motives, such as self improvement and self enhancement (Wood & Taylor, 1991). When the aim is self enhancement; individuals may for example choose to compare the self to a better off other in a particular domain, such as poetry, to ascertain how one can improve one's own performance (Wood & Taylor, 1991). When considering self enhancement, one may engage in a downward comparison, comparison with a worse off other in order to create or maintain a positive image of the self (Wills, 1981). This latter research also suggested that the process of social comparison is not as rigid as originally suggested (cf Wood, 1989).

Although it may be interpreted that self improvement was alluded to as a motivation in the original theory (the universal drive upwards), it was only in later years that these wider motivations and indeed effects of comparison on the individual were considered in greater depth. It has been noted that individuals employ social comparisons for various aspects of self-evaluation,

from ‘Am I alone in thinking this?’ ‘What should I think?’ to ‘Is this a bad thing?’ and various other self evaluative pursuits besides those originally outlined (Buunk & Gibbons, 2000). The fact that individuals employ social comparisons for such a wide range of self evaluative pursuits may explain the suggestion that to conduct social comparison is a ubiquitous occurrence (Mussweiler, Rüter, & Epstude, 2005).

In fact, research has supported this idea noting that conducting social comparisons is an everyday occurrence for individuals (Wheeler & Miyake, 1992), used to inform self judgements, experiences and behaviours (Corcoran, Crusius, & Mussweiler, 2011). For example, individuals may compare their salary to that of a co-worker (Sweeney & McFarlin, 2005;) their physical abilities to that of an athlete (Mussweiler, Ruter & Epstude 2004;) or a newly reformed smoker may compare their experiences to others at a similar stage in abstinence (Salovey & Rothman, 2003). Further, it has been suggested that people are frequently confronted with information about others, what others do and relate this back to themselves, and when they try to make sense of aspects of themselves they seek others to help inform this, considering their own self aspects in relation to others (Mussweiler, Rüter, & Epstude, 2005). Research has suggested then that all individuals are motivated to employ the process of comparison with others to self-evaluate, and whilst the motivations to do this are debatable, individuals also differ in the extent to which they use social comparisons to inform self-evaluations (Gibbons & Buunk, 1999). This ‘social comparison tendency’ (Huguet, Dumas, Monteil & Genestoux, 2001; Dittmar & Howard, 2004) or ‘social comparison orientation’ as it is referred to in the

literature, (Gibbons & Buunk, 1999; Buunk, Oldersma & de Dreu, 2001) is likely to be related to other self-evaluation factors, including the beliefs individuals hold about themselves.

Supporting this idea is Self-Affirmation Theory (Steele, 1988) which proposes that there exists a self system which permits individuals to explain themselves and the world to themselves; providing explanations and rationalisations. The aim of these endeavours is to enable the maintenance of a perception of the self as good, competent, coherent and stable. These self rationalisations and explanations (self-affirmation processes) are activated when the individual encounters information which is perceived to threaten perceptions of adequacy and self integrity. These self-affirmation processes of explanation, rationalisation and possibly actions enable feelings of self worth to be restored (Steele, 1988).

However research suggests that individual differences in self-evaluations such as self-esteem can be influential in how individuals respond to the receipt of dissonant information about the self; that is, individuals may interpret social information which is inconsistent with their views to the self in different ways. Steele, Spencer and Lynch (1993) conducted an experimental study which suggested that those with high self-esteem were less likely to change their attitudes following a dissonant experience than those with low self-esteem and suggested that this is because those with high self-esteem are more likely to accept dissonant information because they have lots of other areas of competence to refer back to. Whereas in contrast for those with low self-

esteem individuals' self worth can only be restored via the changing of attitudes to fit with the previous dissonant information.

2.2 Self-concept clarity

The beliefs individuals hold about themselves, can - as earlier discussed - be defined as the self-concept (Shavelson, Hubner & Stanton, 1976) which is formulated of the various identities held by the individual, including the traits and characteristics of the individual Oyserman, 2004). Recall that adolescence is a time when the self-concept both becomes more developed and more integrated (Sebastian, Burnett, and Blakemore, 2008), and in keeping with this research suggests that individuals vary in the extent to which their self beliefs fit together clearly and consistently, that is individuals differ in the clarity of the self-concept (Campbell et al., 1996).

Self-concept clarity is defined as the extent to which beliefs about the self are clear consistent and stable across time. It characterises an individuals' beliefs about themselves with no relevance to accuracy of beliefs, only how clear and well defined self beliefs are (Campbell et al., 1996). So it is possible for people to hold inaccurate self beliefs, however, the aspect of this belief which influences behaviour is the fact that people hold these beliefs to be true. If the self-concept is the formulation of the various identities of individuals then, the clarity of self-concept is how well these identities and perceptions of the self fit together.

Therefore, if individuals hold uncertainty around how perceptions of the self fit together and have highly unchangeable self views, these individuals are defined

as having a low level of clarity of self-concept (Campbell et al., 1996). It would make sense then that these individuals may compare themselves frequently to others to inform the self-concept. This is supported by the idea that in the event of uncertainty around self views individuals will attempt to reduce this uncertainty via comparisons with others (Festinger, 1954). Further, research has suggested that individuals who hold a low level of self-concept clarity do in fact compare themselves more frequently to others than those who hold a clearer defined and consistent view of the self attributes (Campbell et al., 1996).

2.3 Self-esteem

Those who hold a low level of self-concept clarity are also reported to often hold a low level of self-esteem (Campbell, 1990). Before considering this further, it is important to emphasise that the self-concept contains an evaluation of all cognitive aspects of the self, including beliefs and values, likes and dislikes (Heatherton & Wyland, 2003). However, self-esteem is more attitudinal based and represents the emotional response to self-evaluations, and is the evaluation of the self-concept, and relates to the extent to which the overall view of the self is of one being worthy or unworthy (Baumeiester, 1998).

As such whilst these concepts of self-esteem and self-concept are related they also exist interdependently; the self-concept may hold objectively positive information about the self, whilst individuals may simultaneously dislike the self (have low self-esteem). Similarly, the reverse is true; people may hold themselves in high regard, whilst having an absence of objective evidence

within the self-concept to support this view. As such whilst self-esteem and self-concept are interrelated, they do not represent the same construct (Heatherton & Wyland, 2003).

The term self-esteem is also used to refer to different types of self-esteem. For example, global (or trait) self-esteem (Rosenberg, 1965) is one of the most frequently used definitions of self-esteem (Blascovich & Tomaka 1993) and refers to overall feelings of worth and value, where individuals can score on a continuum from low to high, with low levels relating to feelings of low self worth and value, the converse being true for high scorers (Rosenberg, 1965). This ten item scale does not assess specific self aspects but overall self views of the self as positive or negative. It is largely regarded as a static variable (cf Wright, 2001), and this measure is associated with the feelings of self worth an individual holds.

However other measures of self-esteem assess aspects including the changeable nature of self views. Such as state self-esteem, or self-esteem assessed rather than an overall picture of the self worth, the perception of one in the present moment, an example of which is the Current Thoughts Scale (Heatherton & Polivy, 1991). Assessment is made of context specific feelings about the self in the domains of performance, appearance and social self-esteem; as such within this scale self-esteem is considered as a series of constituents or pieces. The Performance subset, considers current self views around one's own performance (e.g. 'I feel confident that I understand things'); Appearance focuses on the current physical appearance ('I am pleased with my appearance right now'), whilst Social Self-Esteem assesses concerns around the

social domain ('I am worried about what other people think of me.'). Much like trait self-esteem the emphasis on this scale is around the perception rather than the reality.

At this point it would be appropriate to consider some issues of contention around trait or global self-esteem and state self-esteem. Whilst most psychologists acknowledge that self-esteem is an enduring characteristic, (Rosenberg, 1979; Heatherton & Ambady, 1993; Trzesniewski, Donnellan & Robbins 2003; Brown & Marshall, 2006) researchers also acknowledge that normal fluctuations in self-esteem can occur, and have considered such short term changes in self-evaluation, or state self-esteem (Leary et al., 1995, Heatherton & Polivy, 1991). For example, in Leary et al.'s sociometer theory, there is suggestion that trait self-esteem incorporates the overall experiences one has of acceptance or rejection with others – their state self-esteem. The state level of self-esteem is also reported by sociometer theory to differ dependent on whether the trait level is low or high; those with high self-esteem are less attuned to rejection (and reductions in state self-esteem) than those with an already low gauge on the sociometer (low trait self-esteem) who are wary of the sociometer reducing further (Leary et al., 1995). This would appear to suggest that state and trait self-esteem, if not analogues of each other; appear to depend on each other. Some argue that state self-esteem and trait self-esteem are largely equivalent constructs; the major difference being that one persists whilst the other is subject to temporary change (see Leary et al., 1995; Hetherington & Polivy, 1991).

Other researchers (such as Brown & Marshall, 2006) disagree with the idea that state and trait self-esteem are analogues of each other, and instead of state self-esteem call these emotional reactions to events 'feelings of self worth', such as feeling proud or feeling ashamed. This is illustrated in an example given by Brown, Dutton and Cook, (2001) who describe the situation of parental pride: Whilst parents might feel proud of their child's achievement, the feeling of pride does not change the amount of love felt for the child. The pride may be present at some times and not at others, and the love is unrelated and independent to that pride which is a constant. Therefore the pride reflects the feelings of self worth whilst love reflects the trait self-esteem. The emphasis for these researchers therefore appears to be that state and trait self-esteem are different constructs.

Whether these self-evaluational states are described as state self-esteem or feelings of self worth, or are defined as similar or different to trait self-esteem, researchers do agree that fluctuations in these self-evaluations do exist (Mruk, 2006). Research suggests that these fluctuations may be the result of emotional reactions to specific life events or circumstances. For example, Heatherton and Polivy (1991) reported that participants' level performance self-esteem decreased after being informed they were to take a difficult exam, and also that failure in a puzzle game lead to decreases in performance and social self-esteem. Vandevelde and Miyahara (2005) reported state physical self-esteem decreased after rejection due to physical incapability by others and also that those with high trait physical self-esteem decreased to the same level as those with low trait physical self-esteem after such rejection. Further, the decrease in

those high in trait physical self-esteem was larger than those low in trait physical self-esteem.

The authors suggest that those with high trait physical self-esteem were not able to protect against reductions in state physical self-esteem where rejection was based on physical incapability. This illustrates that where a domain is of particular self importance failure in that domain can reduce state self-esteem even in the presence of high state self-esteem in that domain. This is further emphasised in research by Crocker et al., (2002) who noted that global state self-esteem altered dependent on whether participants received acceptance or rejections into graduate school. Those who experienced rejection reported a self-esteem decrease, whilst those who were accepted reported an increase in self-esteem. Further, the effect was pronounced for those whose self-esteem was contingent on academia. This serves to emphasise the idea that where feelings of self worth are placed is important when responding to positive or negative events.

This demonstrates how feelings of self worth or state self-esteem can fluctuate in response to life events and day to day circumstances, and the importance of where self-esteem is staked (for example in an academic domain as illustrated above). A particular day to day circumstance is that of social comparison, with research suggesting indeed that individuals engage in this pursuit in 'everyday life' (Wheeler & Miyake, 1992).

2.3.1 Self-esteem and social comparison tendency

There is suggestion within the literature that those who hold a low level of self-esteem may conduct more social comparisons with others (Campbell et al., 1996). Some aspects of the research literature around self-esteem suggest that the self beliefs of those with low self-esteem are often characterised by negative self views (Rosenberg, 1965), with an opposing side to this argument discussed in later paragraphs. It would be expected then that comparisons with others would be an attempt to self enhance, to feel better about the self. Research has supported this notion noting that those with low self-esteem conduct more downward social comparisons than those with higher self-esteem (Wills, 1981). Similarly, Wood, Taylor and Lichtman, (1985) noted that women with breast cancer made spontaneous downward comparisons during interviews, supporting the idea that self enhancement is a motive for comparison, especially amongst those with diminished or low levels of self worth.

In keeping with the idea that those with low self-esteem may hold negative self views, research suggests self improvement as a motive of social comparisons (Sedikides & Strube, 1997). This is supportive of the idea that those with low self-esteem would conduct more social comparisons than those with high self-esteem as they perceive a greater need to self improve. Research suggests that those with low self-esteem are indeed motivated to self improve (Wayment & Taylor, 1995; Błachnio, Przepiorka & Rudnicka, 2016) and as such social comparison then for these individuals may represent an attempt at improving self aspects, to look to others to see how they can achieve this.

In contrast, research also suggests that those with low self-esteem are motivated to verify current self views (Jones, 1973). As such when those with low self-esteem conduct social comparisons they may distort information so that it confirms their current and potentially negative self views. This may lead them to feel that self improvement is out of reach for them, and research suggests that this may occur as a result of social comparison in an upward direction where the difference between self and comparer is too great (Collins, 1996). However, because the underlying motivations of those with low self-esteem are to self improve; the comparison process may begin again. This would suggest that those with low self-esteem do conduct frequent social comparisons but do not necessarily achieve the desired goal of self improvement, the overall goal of their self-evaluation. However, consideration should be given to the fact that not all individuals with low self-esteem may engage in frequent social comparison with others. Learned Helplessness Theory originally proposed by Abramson, Garber, Seligman, (1980) suggested that individuals can come to believe that the consequences they experience in life bear no relation to their behaviour, based on experiences of uncontrollable outcomes. It was also observed that learned helplessness is often associated with lower levels of self-esteem (Seligman, 1981). With this in mind those with low self-esteem may not be motivated to conduct social comparisons if they believe their current situation to be unchangeable due to learned helplessness.

Thus far there has been particular emphasis on the suggestion that low self-esteem and negative self views occur together. However it is acknowledged that this may not always be the case. Recall at the start of this section it was

stated that some researchers regard low self-esteem as defined as negative self views (Rosenberg, 1965). It should be noted that research exists to the contrary when considering the negativity of the self views of those with low self-esteem. It has been suggested that rather than having poor self views, those with low self-esteem are especially uncertain about their views of the self, (Campbell, 1990). Consistent with this research suggests that most non clinical populations have low self-esteem around the midpoint of the Rosenberg trait self-esteem scale (Rosenberg, 1965), rather than very low scores, representing a type of self uncertainty rather than dislike of the self (cf Campbell & Lavallee, 1993). Social comparisons in this instance then may represent an attempt to increase certainty over self attributes; that is, to compare to others to become more knowledgeable about what the self is and what it is not. This may offer an explanation as to why those with low self-esteem may conduct more social comparisons than those with higher levels of self-esteem.

2.4 Impression management

Whilst people are motivated to evaluate themselves they are also motivated to manage the impressions others form of them and attempt this in their day to day exchanges with others (Goffman, 1959). This has been referred to as 'impression management' or 'self presentation' with some researchers using these terms interchangeably. An important point here is to address the terminology used and choice of terminology to be used herein. Schlenker (1980) distinguished between impression management and self presentation, stating that self presentation referred only to cases where projected images in interactions are relevant to the self, whilst impression management he

suggested referred to the attempts individuals make to control the images that one projects in both real and imagined interactions with others. The difference between the two then for him was that one involved only the projection of images of which the self is relevant ('self presentation') whilst the term impression management considered attempts to control larger aspects of social interactions.

As Leary and Kowalski, (1990) have pointed out though, individuals may attempt to manage the impressions others form of aspects of the social world other than the self. Therefore it would make sense to conceive that individuals attempt to manage the impressions of both the self and wider images in social interactions, and to self present in cases beyond only self relevant images. For this reason it is suggested here that self presentation and impression management could be considered as interchangeable terms, a concept which has been commonly used within the academic literature (see Rosenberg & Egbert, 2011; Lee et al., 1999).

2.4.1 Impression management and self-evaluations

At this point consideration moves forward to outline how individuals may attempt to manage the impressions others form of them, before considering how self-evaluation factors may predict differences in these attempts. The work of Goffman (1959) represented one of the earliest attempts to understand impression management. Via a stage and audience metaphor Goffman (1959) suggested that individuals are social actors performing their lives upon the stage, presenting different faces to different audiences. The way individuals

attempt to manage the impressions of others then differs according to the social situation. The key in these impression management attempts is the attempt to present the self most suited to the particular audience and situation one finds oneself in (Goffman, 1959, also noted by Schlenker, 1980). The emphasis in this dramaturgic analogy is the attempts individuals make to present an optimal self. However research suggests that there are constraints which exist which suggest individuals are not always able to do this.

This may be demonstrated when considering Leary and Kowalski's (1990 two factor model of impression management, which suggests that impression motivation and impression construction form the two processes of impression management. Impression motivation, they argued, is the function of three factors: how goal relevant the impression created is, how valuable a desired outcome is, and the extent to which there exists a discrepancy between desired and current self images. With reference to goal relevance Leary and Kowalksi maintain that the more relevant eliciting a specific impression is to achieving goal fulfilment, the greater the motivation to manage the impressions others form, with additional factors such as the publicity of one's behaviour, extent of dependency on the target, and the amount of continued interaction anticipated with the target all acting to influence the relevance of impressions to goal fulfilment. For example, the more people see or are likely to learn about the behaviour one displays, the more likely one is to manage the impression attempted. Also, where individuals are dependent on the target for the goal outcome, impression management will be greater, for example eliciting a good impression when being interviewed for a much coveted position. Where

continued interaction is anticipated increased control to manage the impression elicited is also observed, for example if you are likely to see the person on a daily basis.

When considering the value of desired goals the model proposes that the more valuable a desired goal is the more motivated one is to elicit the impression in others to achieve it. For example, if the applicant does not really want the job they have been coerced into applying for, they will be less concerned with the impression they elicit in the interviewer than if they are being interviewed for their ideal job. Attributes of the target are also relevant in determining the importance of creating an impression, with individuals more motivated to manage the impressions given to high status and powerful individuals, or those which hold relevance to the development of specific identities. For example, for a psychology student making a good impression on a psychology professor assists in the development of one's identity as a psychologist more than making a similar impression on one's parents (Leary & Kowalski, 1990).

Finally, the potential for discrepancy between desired and current image is considered. This relates to the extent to which a discrepancy exists between the self one believes others see them as, and the self they would like others to see. If individuals feel that others have perceived them outside of the realms of the image they would like to display - such as embarrassing oneself in a social situation- they will be especially motivated to repair this impression, for example by emphasising the positive attributes one has (Leary & Kowalski, 1990). These three elements all act therefore to influence impression motivation.

The impression construction component is reportedly determined by five factors (that is, five factors influence the impression individuals try to construct;) these being the self-concept, desired and undesired identity image, role constraints, the values of the target and the current or potential social image. The self-concept segment notes that the self-concept is a fundamental determinant of the impression management process, involved in for example, choosing the appropriate self aspects to portray onto public view in a given situation. Self beliefs act to influence this process, specifically the extent to which they believe they can successfully impart a particular impression (Leary & Kowalski, 1990).

Self presentations individuals display to others are also influenced by the self they would like to be (the desired self) and the self they do not wish to be (undesired identity), as considered within the factor of desired and undesired identity images. These images guide behaviour when attempting to garner specific impressions in others: individuals will attempt to display a self consistent with the desired identity and actively avoid behaviours consistent with the undesired self identity (Leary & Kowalski, 1990). However, these may be hindered by role constraints as considered in the next factor.

The social roles that one inhabits lead individuals who occupy these roles to behave in specific ways, with Leary and Kolawski giving the example of the behaviour and attitudes expected to be observed by a clergyman. Consequently individuals attempt to impress onto others a public image which is consistent with the role demands they find themselves in within a given situation. Indeed as Goffman (1954) noted individuals are required to have a series of different 'faces' to present to different targets, and, with different targets come

different 'target values'. individuals tailor their self presentation to meet the perceived values of the interaction participant, selecting from the many self images they possess, to display the one most likely to elicit the desired reaction, to give the intended impression (Leary & Kowalski, 1990).

Finally, impressions individuals attempt to elicit are also influenced by their current social image and the social image that they may have in the future (what others may learn about them in the future for example), considered within the current or potential social image factor of impression construction. Information that such others may gain about the individual in the future may then act to constrain the impression management attempts that take place. As such, impression management incorporates a strategic approach incorporating both how they may be seen now and how they may be perceived in future interactions (Leary & Kowalski, 1990).

Leary and Kowalski also noted that whilst individuals might have the motivation to impress on others a particular presentation they may not actually carry this out, as such they may not attempt this impression construction, and from the model outlined above it can be seen that self-evaluation factors may fit into whether an individual attempts a particular impression construction. To consider self-esteem for example, research suggests that those with low self-esteem fear rejection from others, as has been considered by Sociometer Theory (Leary, Tambor, Terdal & Downs, 1995). Sociometer Theory notes how those with low self-esteem are highly attuned to being excluded socially by others, this fear of rejection may mean therefore they limit themselves to a 'safe' self presentation

whereby perceptions of likelihood of rejection are reduced, and so a different impression construction may be repressed.

Further, self-evaluation factors may also be relevant when considering impression management attempts, that is, when people commit to a particular self presentation in an attempt to manage the impressions others form. Again, to consider self-esteem; goal relevance of the impression created is likely to be highly important amongst those with low self-esteem. Goal relevance refers to how important making a desired impression is for a particular individual; whilst some individuals may place making a desired impression as highly important, others may be less concerned in this domain. Research suggests that those with low self-esteem place particular importance on social approval, with social approval being a goal within their interactions with others which is highly relevant to them (Leary, 2001). As such those with low self-esteem are especially motivated to project favourable and desirable impressions onto others to achieve social approval (Leary, 2001). This links readily to the sociometer theory: those with low self-esteem already fear others will not like them, and will make efforts to increase their relational value or perceptions of others opinions of them (Leary, Koch, & Heckenbleikner, 2001).

To move on to consider the extent to which there exists a discrepancy between current and desired self images, research suggests that those with high self-esteem have a smaller discrepancy between their desired and current self images than their low scoring counterparts (Renaud & McConnell, 2007). When undertaking impression management attempts individuals have a range of self images that are acceptable to project in the current situation (Leary & Kowalski,

1990). If one feels it is likely that the impressions others form will fall within the range of images they feel it is acceptable to project, impression management will be reduced, compared to compensatory efforts if one feels the impression elicited is outside of the range of acceptable impressions (Leary & Kowalksi, 1990). Those with high self-esteem reportedly have highly favourable self views and anticipate others will readily form a positive impression of them (Baumeister et al., 2003) and as such it is suggested that their motivations to monitor impressions garnered are less intense than their lower self-esteem counteracts (Leary, 2001).

Sadler et al., (2010) examined self presentational tactics employed by individuals and reported that those with higher levels of negative emotionality (negative emotional states) report using more assertive and defensive self presentational tactics than those with lower levels of negative emotionality. Further, research suggests that low self-esteem is associated with a range of psychological difficulties including negative emotionality (Leary & Downs, 1995); arguably therefore the findings around negative emotionality and self presentational attempts by Sadler et al. may be relevant to those with low self-esteem also. The findings reported may suggest that those individuals with negative emotionality invest more effort into attempting to garner a desired impression and to attempt to repair a negative impression, suggesting that these individuals therefore have more concern over how they are perceived by others and are more concerned about self-presentational failure than those with a lower level of negative emotionality.

The factors which influence impression construction may be relevant to how clear the self-concept is (self-concept clarity); however this has not been explicitly tested empirically. If the self-concept is unclear and unstable it may be difficult to identify the difference between the desired and undesired self image. Although there is no evidence to directly support this idea, research around self-esteem and clarity of self-concept support the notion, for example around the use of 'self to prototype matching' (Niedenthal, Cantor, & Kihlstrom, 1985). This refers to the cognitive processes that occur when individuals are making decisions about behaviour to undertake. During this process individuals will typically look to their perception of the typical person who will engage in the behaviour in question. Setterlund and Niedenthal (1993) cite the example of lawnmower purchase to illustrate these ideas. An individual looks to the perceived typical user of each type of lawnmower, and the owner that is the best fit to the self is the one that will be chosen.

The use of self to prototype matching to inform decision making has been considered by Setterlund and Niedenthal (1993) who demonstrated via correlational studies that those with low self-esteem were less likely to prototype match to form decisions than those with high self-esteem. Participants completed the Rosenberg self-esteem scale and a self-concept questionnaire. The self-concept questionnaire rated the extent to which a series of traits described them from 1 'not at all' to 7 'very well'. In a later session prototype matching was assessed via the consumer preferences survey, which contained descriptions of the typical owner of several car models, these

descriptions incorporated four moderately positive traits from the self-concept questionnaire.

Participants viewed 5 prototypes (descriptions of 5 car owners) and ranked them from 1 (preferred this car most) and 5 (preferred this car the least). The extent of the similarity between the self and the prototype was assessed, whereby each participant had 5 scores which revealed the difference between themselves and each car owner (prototype); with larger scores indicating a greater difference between the self and the prototype (less similarity). These similarity scores were correlated with the rank orders of each car which demonstrated the extent to which participants used prototype matching. A positive correlation was found which revealed therefore that those with high self-esteem were more likely to base their preferences for cars on the similarity between themselves and the car owner prototypes; they were more likely to prototype match.

A further study demonstrated that when self-concept was made more or less confused, those with a confused self-concept were less likely to prototype match to inform decision making. This may be interpreted that in order to inform behaviour and make decisions including around the type of self to display to others, one needs to have a clear idea of the qualities of the self, in order to ascertain what self aspects one would like and not like to display to others.

2.4.2 Self-concept clarity

As such then individuals use the prototype to help make self relevant decisions – 'do I want this or that lawnmower?', and in turn it may be interpreted 'Do I want to present myself as a person who owns this or that lawnmower?' (a desired self image versus undesired self image to display). In order to know this it may be interpreted that one needs to know enough about the self to compare the self to the typical user of different lawnmower types: that is, to prototype match. This notion is further supported by research by Campbell, (1990) who suggested that individuals with a low level of self-concept clarity take longer to decide which traits are like or not like them in a task. Individuals were required to rate themselves on a series of bipolar trait adjectives (e.g., considerate, confident, friendly, assertive, defensive, shy, rude, awkward) and also respond to whether pairs of opposing traits were 'like me' or 'not like me'.(e.g. 'predictable-unpredictable; 'tactful-candid'). As well as taking longer to choose whether a trait was like them or not like them, those with low self-concept clarity had lower confidence when rating their traits on the bipolar trait adjectives and had more changeable ratings in these traits at follow up than those with high self-concept clarity. Both these ideas provide indirect support for the notion that to know the self one would like to display (desired self) and to know and avoid presenting an undesired self, requires knowledge of current self attributes, and as such a clear self-concept may be a key element of this.

2.4.3 Role constraints

Another consideration of importance is that of role constraints: Role constraints demonstrate that it is not always appropriate to display a specific impression construction; therefore whilst individuals may be able to present a specific self presentation they may not perceive it is acceptable in some circumstances. For example an individual may perceive it as appropriate to display certain self aspects when socialising with friends but not during work hours. As such then, both impression motivation (the desire to give a specific impression) and impression construction may be influenced by self-evaluation factors, including self-concept clarity and self-esteem may be relevant variables when considering impression management strategies. These are areas which have remained largely unexplored within the research literature, despite the fact that some self-evaluation factors such as self-esteem and social comparison tendency have experienced prolonged research interest over many years.

2.5. Impression management online

Many individuals experience an enduring interest in how they are perceived and evaluated by others, (Leary, 1995) and whilst impression management is an area which has been widely researched a relatively new area relevant to impression management is the Internet. Whilst the previous sections of this thesis have only considered offline behaviour, the implications of the Internet for impression management are now outlined. Use of the Internet has consistently increased over recent years, with estimates for usage in 2016 suggesting that 41 million adults within Great Britain reported using the Internet daily: an increase of 25 million from 2006 (Office for National Statistics

(ONS) 2016). However, it would be unwise to conceptualise the Internet as a homogenous entity. There exist numerous online spaces which differ to their offline equivalents, and also vast differences in online behaviour. For example, the process of online banking is different to online dating. Indeed, individuals' intentions, behaviours and motivations differ dependent on the online activity they choose to engage in (Attrill, 2015). Similarly, Attrill and Jalil (2011) and Attrill (2012) noted how the type of website, as well as the goal of the self disclosure, influenced the manner in which individuals disclosed information about themselves online.

Whilst discussion so far may suggest that individuals always want to manipulate their self presentation and are consciously doing so, it would be remiss not to consider that this may not always be the case. Whilst the behaviours individuals' display; be this online or offline; are chosen to be undertaken, it is suggested that this may be in an unconscious manner (Attrill, 2015). For example, when presenting the self online certain aspects of identity may be concealed, and this may represent an unconscious response to the difficulty of presenting a complicated multi faceted self (Chester & Bretherton, 2007).

Presenting a self of many facets may be easier in some online spaces than others, or at least online spaces vary in the extent to which they permit individuals to express the self without limitations. Facebook for example often mimics the offline social network, that is, the social contacts and social groups one holds in the offline world (Amichai-Hamburger, Kaplan, & Dorpatcheon, 2008). However, Facebook differs for reasons including the asynchronicity or the pace of the interaction. Individuals are able to take their time to formulate a

response, unlike in face to face interactions with friends which require more instantaneous responses. Because the immediate response of the interaction partner is not always visible (facial expressions in response to disclosures for example) individuals may disclose to others more easily than they may in face to face contexts (Ellison, Steinfield & Lampe, 2007). However, in instances such as these where the offline and online personae are clearly linked, individuals are limited in how creative they can be with their online presentations (Zhao et al., 2008). However on the other end of the spectrum are more anonymous forms of social media such as Whisper (www. whisper.sh/). Interactions with others via this medium are not readily linked to the offline persona, and as such individuals may feel more empowered to disclose thoughts and feelings than they do in offline settings or even in more anchored social media (where the offline persona is often easily identifiable;) such as Facebook. However it may be remiss to suggest that all individuals who set up Facebook accounts provide identifiable user information, since some users seemingly set up accounts where they are not at all identifiable; as considered by Krombholz, Merkl, and Weippl, (2012).

It would seem apparent that the online world may differ to the offline world, but equally that not all online spaces are the same and as such the consideration of how the offline world may differ to the online world warrants consideration. One cannot simply make the assumption that the processes which govern how we manage impressions offline will neatly transfer over to the online world (Fullwood, 2015).

2.5.1 Anonymity

The suggestion is that online world is different to the offline world in some ways, and in particular that people may perceive themselves as being more anonymous - with this perception of anonymity being key; (McKenna, 2007) and this holds implications for the way individuals attempt to manage the impressions others form of them. Modern research considers the perceptions of anonymity and how it is this perception which is key to disclosure. For example Liu, Min, Zhai and Smyth (2016) conducted a study of micro blogging. Whilst similar to traditional blogging, it differs in content length, typically limited to 140 characters. It was suggested that it was perceived anonymity which related to levels of self disclosure. Self disclosure was measured in terms of the depth, the amount, intent as well as the honesty and valence of the disclosure, whilst perceived anonymity included items such as 'I believe that none of the other micro-blogging users know who I really am'; 'My identity is hidden from other micro-blogging users.' It was suggested that perceived anonymity as well as the perceived risk both negatively relate to self disclosure in these settings, with perceived anonymity having the strongest influence on self disclosure: e.g. those that perceived greater anonymity disclosed the least, suggesting that those who perceive themselves as more anonymous may also feel less connected to other users, leading to a reduced willingness to disclose personal information. This study therefore acted to demonstrate how perceptions of anonymity influence self disclosure.

Similarly Chen, Li, Hu and Li (2016) examined self disclosure and anonymity variables on Chinese social media site Sina Weibo: A site which reportedly

combines the functionality of both Twitter and Facebook. Distinction was made between anonymity types, namely perceived anonymity and network technical anonymity, with network technical anonymity referring to objective measures of anonymity and involving measure of the extent of personal information disclosed, and perceived anonymity relating to the individual's perception of the extent to which they are anonymous. Levels of network technical anonymity were seen to have a positive influence of perceived anonymity. It was revealed that self disclosure tendency was negatively influenced by network technical anonymity, but positively by perceived anonymity. As such, those who held higher levels of perceived anonymity tended to disclose more information, illustrating how whilst there is a complicated nexus between perceived and network technical anonymity, the perception of anonymity influences self disclosure.

2.5.2 Identifiability

Identifiability refers to the extent to which an individual can verify someone's identity (Amichai-Hamburger & Hayat, 2013).This can be linked to the 'Stranger on the Train Phenomenon', where individuals are known to disclose more to strangers who they do not anticipate seeing again, than people they know well (Thibaut & Kelley, 1959). This relates to the idea that people may disclose more deeply to others when they feel they are anonymous, specifically where the perceived risk of subsequent interactions are low, and therefore the risks of disclosures getting back to one's social circle are also slim (Amichai-Hamburger, 2012). Individuals can therefore 'get off the train' without consequence since the risk of follow up is small; in short the interaction results in a low level of

identifiability. Research has supported this notion noting that individuals may disclose more to others when they perceive themselves as not being identifiable to others and that this may relate to the fact individuals disclose more when they perceive the social ramifications within the offline world as being low (Walrave & Heirman, 2010, Baym, 2010).

It should be noted however there is evidence to the contrary suggesting that identifiability in online contexts may not be as influential as one might think. Research examining the content of online blogs has suggested that it might not be how identifiable writers are in their blogs which is influential to content produced, but how likely they are to be held to account in their writing (Fullwood, Melrose, Morris & Floyd, 2013). Findings by Fullwood et al.,(2013) suggest that identifiability may not be as important a construct as previously considered, and that whilst age, gender, type of online environment and level of identifiability influence both type of content and amount of disclosure in online blogs, accountability may in fact be more important when considering disclosure and language use than identifiability. The authors suggest it may be the act of being online which enables individuals an increased sense of freedom and protection in order to disclose, which is not largely enhanced by anonymity, adding that some particular online spaces such as those with a perceived small online audience may mean accountability is more important when considering language use and self disclosure.

In addition to accountability, motivation may also be a factor relevant in online self disclosure. Attrill (2012) examined the different types of self disclosure (beliefs, relationships, interests, intimate feelings and personal matters) and the

different types of Internet areas across which these types of disclosure may be shared (instant messaging, social networking, online shopping and general communication). It was reported that the largest levels of overall self disclosure were reported in instant messaging followed by social networking websites. It was suggested that a more detailed consideration of the quality of disclosures and specifically their depth is needed. As such examination of disclosures in greater depth may reveal that where individuals are both visually anonymous and provided the goal is to do so, disclosure may be greater. In other words, we must consider one's motivation for self-disclosure in addition to the online space in which people are interacting as this is likely to have a complex nexus with anonymity.

Regardless of the way anonymity is conceptualised, or indeed the aspect of anonymity considered, the wide variety of sites within the Internet mean that anonymity exists along a continuum from largely identifiable to more anonymous (Chester & Bretherton, 2007). It should be noted here that whilst individuals may be identified via their Internet Protocol (IP) address, most individuals do not spend their time attempting identification of others in this way. However, it has been suggested that other factors may relate to the way individuals modify their self presentation online compared to offline, and that these may not just be related to perceptions of anonymity (Joinson & Paine, 2007). Closely related to the anonymity perception is the fact that in online settings current physical appearances of individuals become less important compared to within face to face interactions.

2.5.3 The varying importance of physical appearance online

Within offline interactions visual presence is at its height, that is, interaction partners are clearly visible, and as a result many visual cues such as height, weight and gender are obvious to the communication partner, as well as their responses to the disclosures received (Amichai-Hamburger & Hayat, 2013). Individuals frequently employ methods of optimally self presenting to others within offline settings, such as the choice of clothes worn, (Fullwood, 2015) and this use of 'ornaments' to deliver a self presentation is widely used (Goffman 1959). However, these 'sign vehicles' including gender and weight may contradict verbal assertions (Goffman 1959) and further, in face to face interactions unintended cues may leak out via non verbal communication (Amichai-Hamburger & Hayat, 2013).

It has been argued that in contrast within many online settings the importance of physical appearance is reduced (McKenna, 2007). However, it should be noted that this depends on the online environment, in some online environments physical appearance may actually increase in importance, for example in online dating. As such it might be more appropriate when considering the currently available social media applications to say that the importance of physical appearance varies. Some online arenas may enable individuals to interact with others in a way that bypasses social barriers, in particular appearance (Mckenna & Bargh, 2000) such as online chat rooms, which may not require any disclosure of physical appearance, Amichai-Hamburger and Hayat, (2013).

In contrast online dating sites for example, are environments where physical appearance becomes much more pronounced and important. In some online dating arenas individuals are required to look through the pictures of others, before choosing one to read more about. In keeping with this Whitty and Carr (2006) have noted that online daters state that they will decline to view the profile of a person if the profile picture is not physically attractive. As such in these settings physical appearance may rather than decrease in importance, become of increased importance. In online dating sites individuals also have the added difficulty of ensuring the physical appearance in the self presentation is appropriate, as illustrated by Whitty's BAR Theory (Whitty, 2007). This theory emphasises the fine line individuals walk between portraying an attractive self and a real self; noting that if the aim is to meet the person offline (and display the actual self appearance) the portrayed self image online must be attractive, but not unrealistic.

Another instance where physical appearance may be of increased importance in online settings are those online environments which involve the 'selfie culture'. The act of 'taking a selfie' refers to the taking of a photograph of the self, usually with a Smartphone or webcam and sharing this with others via social media (Qiu et al., 2015). The academic literature suggests that this is a common activity in the online world, with research reporting that 96% of the UK population surveyed had taken a selfie, and around 25% had taken one in the past day, the majority of whom reported that they had shared these online (Katz & Crocker 2015). In keeping with this it is reported that millions of selfies are shared on social media sites (Dhir et al., 2016) facilitated by photo-sharing

sites such as Instagram, and social networking sites which enable the upload of pictures such as Facebook and Twitter (Weiser, 2015). In online environments then such as Facebook, Twitter and Instagram for example, it may be argued that physical appearance becomes more important, not less.

This would suggest that in terms of the importance of physical appearance in online environments this varies between sites. However, when one considers individuals attempts to self present in the form of uploading self pictures, regardless of medium individuals have increased control over the self images that they choose to upload and share. This therefore holds important implications for impression management. In these instances individuals are then able to ensure that the presentation they portray to others is optimal, to put their 'best foot forward' when interacting with others (Walther, 1996). This is enabled at least in part due to specific features around the immediacy of online interactions.

2.5.4 Online interactions and the immediacy of the interaction

Face to face interactions occur in a synchronous manner; as Berger (2013) notes, in face to face interactions, one person speaks and the other normally responds shortly afterwards. In contrast, online settings often enable individuals to engage with interaction partners on an asynchronous basis, as such an immediate requirement to respond is not there, unlike in face to face interactions. The Hyperpersonal model suggests that via asynchronous interactions with others, increased time can be taken to think about the message content, to edit it appropriately, and as such individuals have

increased control over the cues they give out to their interaction partners (Walther, 1996). As such individuals have increased control over the time and pacing of interactions with others, an opportunity to document a response, reread and edit if required, enabling individuals increased control over the types of self presentations they make to others (Valkenburg & Peter, 2007; Valkenburg & Peter, 2011). These factors may therefore lead to 'optimal' self presentation (Walther, 1996). The emphasis here then is that relationships with others when occurring in computer mediated conditions can become hyperpersonal compared to face to face interactions.

This is in contrast to the earlier cues filtered out models of computer mediated communication which proposed that computer mediated communications reduce the number of cues available to interaction partners and as a result the development of relationships with others is impeded (Culnan & Markus, 1987) rather than hyperpersonalised. It was argued that the lack of cues meant a reduction in social presence of the communicators (the amount of visual, acoustic and physical contact between two individuals) and suggested therefore that as an interaction it is more impersonal and less intimate than face to face interactions (Kiesler, Siegel & McGuire, 1984).

In contrast therefore the Hyperpersonal model placed emphasis on aspects such as the fact that individuals can exploit the time delay to both construct and to later edit the way they wish to present themselves to the communication partner (Berger & Lyengar, 2013; Walther, 2007). As a result individuals are able to selectively self present to others (Walther, 2011).Even in online environments which are less asynchronous such as online chat, the message is

not complete and therefore not submitted to the communication partner until the writer presses send, therefore even though interactions can be very rapid via this medium (Valkenburg & Peter, 2011) the level of editability still exceeds that in face to face interactions (Walther, 2007).

Online interactions of this nature may therefore be of particular benefit to some individuals, for example those with low self-esteem. These individuals are reportedly anxious in face to face interactions and may prefer online communication methods (Joinson, 2004). Joinson (2004) in an experimental study demonstrated that those with low self-esteem preferred email interaction over face to face communication in contrast to those with high self-esteem, and this was especially true when there was a risk of rejection. It would appear then that the anxiety around fear of rejection is pronounced in those with low self-esteem and that there is something about email communications which mediates this risk for them. Joinson explains that email enables individuals to develop a best self presentation and they have more control over the non verbal cues they give out in interactions. This allows more control over the displayed response to negative feedback such as rejection, that is they have more control over the way they self present in response, they have more control over the pace of the interaction, and can limit the amount of negative cues such as nervousness that they give out.

Joinson suggests the different preferences for communication methods between low and high self-esteem individuals can be attributed to the differences in self protection needs between low and high self-esteem individuals. He maintains that high self-esteem individuals less likely to feel threatened by reactions of

others because of the many domains of self worth to fall back on unlike those with low self-esteem. Although this study considered email interactions it demonstrates how individuals can use specific features of Internet communications (including Facebook) to overcome barriers to communication, and why this may differ between low and high self-esteem individuals. It echoes the notions of Self-Affirmation Theory, which proposes that those with low self-esteem have fewer areas of perceived competence and ability to draw back on in times of challenges to self worth and integrity, in contrast to those with higher self-esteem who possess many areas of self worth to draw on (Leary, Tambor, Terdal & Downs, 1995).

This therefore suggests that some online environments may assist individuals to overcome barriers to communication (Ellison, Steinfield & Lampe, 2007). Ellison et al., (2007) suggested that those who might otherwise feel too shy to engage in interactions with others feel more able to communicate via Facebook, and that this may help them to develop relationships with others which may otherwise be short-lived (latent ties), turning them from latent ties into weak ties. The Facebook network may provide information about others which helps users identify those with whom they want to develop a weak tie relationship (for students this might be the student who is good at maths). As such Facebook interactions may be of particular benefit to those with low self-esteem, enabling them to develop relationships with others with greater ease than in offline settings. Research has supported this noting that those with low self-esteem commonly cite online environments as easier to communicate with others than face to face interactions (see Forest & Wood, 2012).

2.5.5 Ease of which we can find similar others

Research also suggests that individuals can find similar others more rapidly online than offline settings (Mckenna et al., 2002). To consider why this might be it is important to note that unusual interests by definition mean that few people possess them, so it is therefore traditionally harder to locate similar others with a similar interest of this nature (Mckenna & Bargh, 1998). Further, if these aspects include stigmatised identities, such as homosexuality (cf McKenna & Bargh, 1998) others with these identities are harder to find offline because similar others may be attempting to conceal these identities within their day to day offline exchanges with others (Amichai-Hamburger and Barak, 2009). In online settings however, similar others may be more easily identified and interacted with. Not least because hundreds of millions of people use the Internet, with all the variety of interests that entails, added to this the ease of searching for groups around different interests (Amichai-Hamburger & Barak, 2009) and it is easy to see why people can find people who are like them.

Similar others may be therefore found with ease, and interaction with similar others may be of benefit to some individuals, for example individuals may be able to explore less dominant identity aspects (Amichai-Hamburger & Hayat, 2013). Further, through interaction with similar others individuals may be able to strengthen and increase the richness of these identities (Amichai-Hamburger, 2012). This may be particularly useful for individuals who hold a low level of self-concept clarity. Research suggests that interacting with similar others can lead to increased self acceptance (Mckenna & Bargh, 1998). This may be because similar others are often reported to be the most useful for social

comparisons (Festinger, 1954), and those with low self-concept clarity are noted to particularly engage in social comparison with others (Campbell, 1990). Conducting social comparison with similar others who hold a similarly stigmatised identity may lead to increased disclosures, whilst displaying self aspects to a range of others who have now been made available may lead to strengthening of the self-concept (Self-concept Unity; Vaulkenburg et al., 2011).

It has also been noted that when interacting in online environments where similar others are present, where a greater level of anonymity is ensured, the repercussions for offline life are reduced (Mckenna & Bargh, 1998), given that unless disclosed these endeavours are unlikely to make their way to the offline social circle. This is important because in the offline world stigmatised identities are often associated with lower self-esteem. For example Link et al., (2001) found that in offline settings stigmatised identities can lower self-esteem. This might relate to the fear of rejection amongst low self-esteem individuals, remembering that those with low self-esteem are especially tuned into this (Sociometer Theory; Leary, Tambor, Terdal & Downs, 1995). However, finding similar others to engage with so easily might lead to increased confidence in displaying this self presentation (Amichai-Hamburger, 2012) which may hold benefits for those with low self-esteem.

2.5.6 Increased control over content produced

The Internet especially enables individuals increased control of the self they present to others (Fullwood, 2015) and holds subsequent implications for

managing the impressions others form. Arguably this increased control over self presentation is especially available with the advent of Web 2.0.

2.6 Web 2.0 and social media

Web 2.0 refers to the way the Internet has changed and developed such that individuals now are able to have an active role in the content of webpages (Power & Kirwan, 2013). In the early days of the Internet, and indeed up until the advent of Web 2.0, Internet use was primarily an observatory affair: individuals were seekers of information. Users passively received information from websites and there was little opportunity to develop one's own content. Web 2.0 changed this and enabled individuals to become creators of content rather than information seekers (O'Reilly, 2007). To consider Goffman's analogy the Internet became the audience and the individual became the producer.

With the introduction of sites which enabled individuals to become creators of online content came the resultant User Generated Content or User Created Content (Vickery & Wunsch-Vincent, 2007). There exist a variety of different sites which enable this, including YouTube, Wikipedia and Second Life (Kaplan & Haenlein 2010) however arguably the ones that have seen the biggest boom in popularity are social networking websites (e.g. Facebook). The ability to present selves to others with such a high degree of control then holds implications for the wellbeing of individuals.

2.7 Social networking sites: Facebook

Social networking sites enable individuals to create a profile describing themselves, displayed either publically or privately online, permitting them to

make connections with other users (Harbaugh, 2010). Facebook is the most popular social networking website, with estimates of 1.09 billion active daily users during March 2016 (Facebook, 2016), for this reason examination of the psychological factors and impacts of use for individuals are of vital importance to researchers. The ongoing popularity of the site may relate to the wide range of activities to which individuals can engage with on the site. On Facebook the user creates a 'profile' which provides basic information about the individual and can be updated to provide information about what the user is currently doing. It permits users to select one or more 'networks' in which to belong, such as a city or university; and individuals can display various types of information about themselves, such as information about institutions they are associated with such as school or workplace, and information about things which are important to them such as books they enjoy, and films they watch for example (Tazghini & Siedlecki, 2013).

Users then choose the people they wish to be part of their contacts on the site ('friends'). Individuals are invited to become 'friends' via a 'friend request' which can either be accepted or rejected. As well as determining who friends are on the site, the user can determine how much information is viewed by different individuals by modifying the privacy settings of the account. Via the use of profiles individuals give and receive feedback to each other (Valkenburg, Peter, & Schouten, 2006). This feedback is given and received via activities including the use of status updates (whereby information of the author's choosing is posted) and friends can view and reply (comment) or 'like' this content (Caers & De Feyter et al., 2013).

It has been suggested that Facebook enables individuals to become the producers and stars of their own production, creating profiles for the viewing of others (Pempek, Yermolayeva & Calvert, 2009) thus enabling individuals to carefully present a specific self presentation online. It seems intuitive then that a social environment such as Facebook, which permits individuals the opportunity to exploit the ability to present optimally, may see individuals developing their social interactions with others and receiving positive effects on wellbeing. It would seem that individuals have an array of different means of presenting to others. This includes for example the use of virtual photo albums, which can be maintained via the uploading of digital images. Individuals can be identified in these images via 'tagging', whereby their name appears in the caption of the picture and linked to their profile. The tag can be removed by the individual concerned whereby the name and link is removed, although the picture remains. Individuals are also able to post video links, and to comment on the images, which appear as text below the image.

As well as this variety of methods of self presenting to others, there are also various means of communicating with others via Facebook. These can include private messages, which are similar to emails, which are sent to a specific singular individual. In contrast there is also directed communication across the network – commenting (Ellison et al., 2014). 'Friends' can post messages on each others' 'walls' (a message board on another's profile) and individuals can also send messages to entire groups. Further, users are able to disseminate invitations to offline events to others; that is to post 'notes' which are linked to

their profile pages, whilst the newsfeed provides a list of the actions that the individual has recently completed.

It should also be noted that individuals can also passively consume content, via 'lurking' (Burke, Marlow and Lento, 2010). It has been recently suggested that the phenomenon termed 'fear of missing out' (Wallace, 2015) may relate to use of Facebook. In keeping with this, research has suggested that those who have a high fear of missing out on the events of their social circle spend longer on social networking sites than those who are less concerned with missing out such events (Przybylski et al., 2013). Therefore for those who have a high level of fear of missing out, Facebook may serve to reduce the likelihood of this occurring.

In keeping with this Facebook use has been applied to the uses and gratifications theory of technology use (uses and gratifications theory Katz, Blumler & Gurevitch, 1974). Simply put, this suggests that spending time on the site serves a valuable purpose which they feel is adequately met to sustain usage. In the example given above, spending time on Facebook may serve to inform what others are doing, and so assists to ensure one is not missing out on perceived important information about ones social circle. Facebook is therefore in this case used to find out what people are doing, and gratifies this need by providing information about the social circle.

Research has considered the different motivations individuals have for using social networking sites, such as experimentation or information exchange (Orchard, Fullwood, Galbraith & Morris, 2014). As such it may also be predicted

that self-evaluation factors may hold predictive value in the motivations individuals hold for using specific functions of social media sites. Research has begun to consider Facebook as a toolkit of features rather than a single activity (Smock et al., 2011) which is particularly relevant when considering the wide array of activities available on the site as outlined above, and research does support the notion that self-evaluation variables including self-esteem, clarity of self-concept and social comparison tendency may relate to the types of activities individuals engage with on Facebook.

2.8 The toolkit of features approach to Facebook use.

In keeping with the toolkit of features approach to Facebook use (Smock et al., 2011) it is acknowledged that there are a variety of different types of activities individuals can engage with on the site. These activities include for example directed communication with others (such as commenting – a cross network communication; Ellison et al., 2014) or passively consuming content (such as lurking; Burke, Marlow & Lento, 2010), as well as sending or receiving messages, or making or reading wall posts (Pempek et al., 2009). Analysis of individuals' style of engagement with Facebook lends itself readily to examination from a uses and gratifications approach. Uses and Gratifications Theory proposes that individuals are selective in the type of media chosen to engage with, and will choose a specific media because it adequately gratifies a particular individual need (Katz, Blumler & Gurevitch, 1974).

Subsequently obtaining information around motivations for engagement with specific Facebook features is likely to reveal different information than motivations for generic site use. Indeed Smock et al. (2011) examined the

motivations Facebook users held for undertaking 5 common Facebook activities (status updates, comments, wall posts, private messages, chat and groups) and whether motivations for Facebook use in general are different from motivations for using specific applications such as those mentioned above. Their findings suggested that only three motivations (relaxing entertainment, expressive information sharing and social interaction) predicted general use whilst six motivations (expressive information sharing, relaxing entertainment, companionship, social interaction, habitual pass time and professional advancement) were significant predictors of use of specific features. This would therefore suggest that individuals choose specific activities on the site to gratify very personal needs and subsequently engagement with different site activities may therefore be considered in relation to individual differences variables such as those related to self-evaluation.

Whilst one can categorise the use of specific Facebook activities and suggest it can be evaluated in terms of gratifications-sought and gratifications-obtained, there is some suggestion that individuals might continue ongoing engagement with the site even if their experience appears to be almost entirely negative (Orchard, Fullwood, Morris & Galbraith, 2015). Via a q sort methodology Orchard et al., identified 4 viewpoints associated with Facebook use (including 'superficial environment', 'valid and valuable social environment' and 'environment of surveillance'). Whilst these first three viewpoints were in line with a gratifications-sought, gratifications-obtained paradigm, the final viewpoint ('Facebook as a destructive environment') is a little harder to reconcile as it appeared that these users obtained an almost entirely negative

site experience. Similarly there is acknowledgement in the literature that Facebook use may adversely impact individuals' wellbeing and it might be specific activities that enable this, such as viewing the profiles of others (e.g. Haferkamp & Kramer, 2011). However, research into the contribution of self-evaluation variables and the psychological impact of different aspects of Facebook use has received limited research attention.

Self-evaluation variables are likely to influence uses and gratifications of Facebook and subsequent usage (what activities individuals engage with on the site) or the impact of that usage (how site use influences individuals emotionally). Whilst this has been considered in the literature analysis is not comprehensive and subsequently research is limited in its depth and scope. The following section will outline examples of research which have examined the influence of self-evaluation variables on both what specific social networking activities individuals choose to engage with, followed by research which has considered the contribution of self-evaluation variables on the emotional impact of such activities.

2.9 Self-evaluation variables and social networking activities chosen

Research has examined the relationship between self-esteem and engagement with specific social networking site features (e.g. Wang, Jackson, Zhang & Su, 2012). Wang et al. (2012) considered the use of Chinese social networking site RenRen, which reportedly holds similar features to Facebook. Participants reported how often they engaged with playing online games on the site, commenting, updating their status and posting attractive photos on the site. Of

the variety of activities self-esteem was only seen to predict making comments on the site, suggesting that those with high self-esteem were more likely to engage with this activity on the site than those with lower self-esteem. This therefore illustrates the potential for self-evaluation based individual differences variables to influence choice of activities engaged with on Facebook.

Further, it has been suggested that those with low and high levels of self-esteem may differ in the activities they choose to engage with on Facebook, and that these individuals might also differ in their perceptions of the positive aspects of Facebook use (e.g. Tazghini & Siedlecki, 2013). Participants completed measures of trait self-esteem, personality, Facebook intensity and the frequency of engaging with certain Facebook activities (e.g. tagging friends and deleting posts), and an open ended question about positive and negative experiences of the site. Variables of Facebook use were examined using factor analysis forming discrete clusters of types of Facebook activity. Self-esteem correlated to some of these factors in a negative direction including feelings of connectedness to Facebook (e.g. Facebook is part of my daily activity), with engaging in negative Facebook activities (e.g. deletion of statuses;) viewing the page of others more than commenting and feeling judged by their Facebook postings. In contrast self-esteem positively correlated with the perception of feeling happy with their Facebook profile. With regards positive or negative experiences of Facebook use findings included suggestion that those with high self-esteem were more likely to report a positive aspect of site use was the ability to share pictures, thoughts and ideas with others than those with lower self-esteem. This study therefore demonstrated how individual differences in

self-esteem may influence specific activities engaged with on Facebook, and perceptions of the benefits of site use. However research has also noted that self-esteem also holds a relationship with other self-evaluation variables, including tendency to compare to others.

Individuals' tendency to compare to others and the relationship with self-esteem and Facebook use was examined in a study by Vogel, Rose, Roberts and Eckles, (2014). Participants completed a measure of frequency of Facebook use, which combined responses to how often Facebook was used, how often participants commented on profiles of others, and an approximation of hours per week spent on the site. Also completed was the Rosenberg self-esteem scale and an assessment of the extent to which upward or downward comparisons were conducted on the site by asking participants when comparing to others on the site the extent to which comparisons were conducted with those better or worse off than the self. This provided assessment of the extent to which individuals performed upward and downward comparisons on the site.

Correlational findings included those with high frequency of Facebook use conducted more upward and downward comparisons and also had lower levels of self-esteem. Those with low self-esteem were also found to conduct more of both types of comparisons on Facebook than those with higher self-esteem. Analyses also found that frequency of Facebook use predicted upward comparison and downward comparison on Facebook, in especially upward comparison (those who used Facebook frequently conducted more upward comparison and downward comparison on Facebook) and whilst upward comparison negatively predicted self-esteem downward comparison did not

(those who conducted upward comparison on Facebook had lower self-esteem). Frequency of Facebook use was seen to negatively predict self-esteem, an effect which was mediated by upward social comparisons (those who used Facebook frequently had lower self-esteem especially if they conducted frequent upward social comparisons on the site). From this it may be suggested that individuals may differ in the extent to which they engage in different activities on the site as a function of self-evaluation variables including their self-esteem, how frequently they use Facebook and the extent to which they engage in social comparisons on the site.

Similar findings were reported elsewhere when individuals were asked how frequently they conducted social comparison on Facebook when viewing newsfeeds or photos on the site (Lee, 2014). Similar to Vogel et al.'s findings Lee reported a negative correlation between self-esteem and frequency of conducting social comparisons on Facebook, as such those with low self-esteem compared more on Facebook than high scorers. It was also reported that Facebook intensity predicted social comparison on Facebook, similarly to Vogel et al.'s findings that frequency of Facebook use predicted upward comparison and downward comparison on Facebook. Lee also considered other self-evaluation variables including social comparison orientation, self-concept clarity and self uncertainty.

Social comparison orientation was seen to correlate positively with social comparison frequency on Facebook and negatively with self-concept clarity. It was also found that social comparison orientation predicted frequency of social comparisons on Facebook, whilst social comparison orientation and self

uncertainty predicted social comparison on Facebook. It appeared therefore that individuals who compare to others more frequently, who use Facebook intensely and have high levels of self uncertainty engage in more Facebook social comparisons. From these findings one might therefore expect individuals low and high in self-evaluation variables to differ in the extent to which they engage with different activities on Facebook and potentially to experience differential mood impact from such activities. Indeed both Lee and Vogel and colleagues examined mood impact within their studies. These will be outlined below in combination with other studies which have considered the impact social media use may have on mood.

2.10 Self-evaluation variables and adverse emotional effects of social media use.

Vogel et al. considered the influence of upward comparisons in different domains (personal characteristics and social characteristics) on state self-esteem and ratings of the self and social comparison target. Participants viewed fictitious social media profiles which differed on amount of social network activity (low: few likes and comments representing a downward comparison; high: a user with lots of likes and comments; representing an upward comparison) and in user content (a healthy profile holder versus an unhealthy profile holder, representing an upward and downward comparison respectively). Whilst an upward comparison on personal characteristics (a healthy lifestyle) did not lead to significantly lower state self-esteem after than the equivalent downward comparison (less healthier lifestyle), with the downward comparison target being rated as similar to the self, upward comparison on social characteristics suggested negative impact on

individuals. Findings suggested that if individuals viewed the social networking profile of an individual who represents an upward comparison on social characteristics (accompanied by lots of likes and comments) they had lower state self-esteem than individuals who viewed the equivalent downward comparison condition (a profile which has received few likes and comments). Further, exposure to the profile holder receiving many likes and comments also led to the profile holder being rated more positively than the self, thus demonstrating how upward comparisons on social media can lead to a negative impact on individuals who view such content.

Similarly, whilst high self-esteem has been seen to buffer against the adverse affects of upward comparison on career domains on social media sites, upward comparison on domains of physical attractiveness appear associated with adverse outcomes (Haferkamp & Kramer, 2011). In their experiment using fictional social media profiles Haferkamp et al. presented undergraduate participants with profiles displaying either a physically attractive (upward comparison) or unattractive (downward comparison) profile holder image or a profile describing an individual with a successful (upward comparison) or unsuccessful career (downward comparison). Participants' mood was assessed after exposure to these profiles. In addition those in the attractiveness condition were asked to rate their level of body satisfaction, whilst those in the occupational attainment condition were asked the extent of their career satisfaction and to estimate how many months they felt it would be before they attained paid employment post graduation.

Whilst high self-esteem was seen to act as a buffer to negative emotional reactions to upward social comparisons in career domains (high self-esteem individuals who saw the highly achieving profile holder stated they would gain employment following university sooner than low self-esteem individuals;) those who viewed the attractive profile holder reported less positive emotions after than those who viewed the unattractive profile holder. Individuals viewing this upward comparison also reported a greater discrepancy between their ideal body and their current body shape and reported they were less satisfied with their own body than those who viewed the unattractive profile holders. This study may act to demonstrate that upward comparisons on social networking sites may be associated with a negative mood shift in the form of less positive emotions, a larger discrepancy between the actual and ideal body and lower levels of body satisfaction than an equivalent downward comparison and so may adversely impact users.

It has also been suggested that individual differences in self-evaluation variables may influence how likely an individual is to report negative emotional outcomes from social comparisons on Facebook. Lee assessed the frequency of experiencing negative feelings from conducting social comparisons on Facebook by asking participants the extent to which they agreed that when they viewed newsfeeds or photos of others they feel others are having a better life, feel others are doing better, and feel isolated. The frequency of reporting a negative feeling from social comparisons on Facebook correlated positively with the frequency of conducting social comparisons, social comparison orientation and Facebook intensity, and negatively with self-esteem and self-concept clarity. As

such individuals who reported a negative feeling from social comparison on Facebook were those who compared often on Facebook, those who compared frequently generally, those with high levels of Facebook intensity, those with low levels of self-esteem and low levels of self-concept clarity, demonstrating the potential for the online world to impact the wellbeing of individuals.

2.11 Get richer hypotheses

Research is rife with considerations into how the online world may impact individuals, for example from conducting such social comparisons, and has formed two major hypotheses. The first, The Social Enhancement or rich-get-richer hypothesis (Valkenburg, Schouten, & Peter, 2005; Valkenburg & Peter, 2007) proposes that individuals who are highly competent in their offline interactions with others, further develop this competence online through their interaction with others. For example, research by Zywica and Danowski (2008) has suggested that extroverted individuals with a high level of self-esteem are popular both in offline settings and on Facebook, demonstrating how those 'rich' individuals can further develop their social competencies online.

In contrast the Social Compensation or Poor-get-richer Hypothesis (Poley & Luo, 2012; Valkenburg et al., 2005) suggests that those individuals who may have difficulty with offline interactions with others (such as shy or socially anxious individuals) may exploit the online environment to form more rewarding relationships with others. This may be because online settings such as Facebook place less emphasis on current physical appearance (McKenna, 2007), the asynchronicity of the medium means individuals can carefully consider the self portrayal they wish to make which, within the constraints of

the medium, permits a more optimised self presentation (Walther, 1996). Initial responses to the disclosures made are immediately visible in face to face interactions (Amichai-Hamburger & Hayat, 2013), however in arenas such as Facebook this reduction in cues to response may reduce the fear of ridicule from others. This is notable since those with low self-esteem are reportedly fearful of rejection from others (Leary, Tambor, Terdal & Downs, 1995). A 'poor-get-richer' effect has also been demonstrated in previous research. For example, introverted individuals with low self-esteem who perceived themselves as not very popular offline, believed themselves to be more popular on Facebook (Zywica & Danowski, 2008).

2.12 Specific Facebook activities and mood impact

Positive and negative outcomes associated with use of Facebook may relate to the type of engagement taking place within the site. Facebook can be regarded as a 'toolkit of features' (cf Smock et al., 2011), for example individuals might spend time looking at their friends' newsfeeds or editing their own profile. Researchers are increasingly noting that spending time on Facebook may involve a variety of different activities (Greitemeyer, 2016; Vogel et al., 2015, de Vries and Kuhne, 2015) and have considered specific aspects of Facebook behaviour including viewing the Facebook newsfeed or editing the Facebook profile. Individuals therefore do not use Facebook in a homogenous way and the types of activities that they engage in are likely to be linked to a number of socio-psychological characteristics including for example personality (see Orchard & Fullwood, 2010). It may be then that different affective responses to Facebook use are related to the type of activity an individual is engaged with on

the site. It would be suggested at this point therefore, that the activity that individuals engage with on Facebook may affect the mood of the individual in interaction with self-evaluation factors. Two notable Facebook activities where this may be illustrated are editing the Facebook profile, and viewing the Facebook newsfeed. These two different activities may lead to different affective responses since editing the Facebook profile may enable individuals to optimally self present to others, and therefore it may be predicted that this may lead to a positive affective response, whilst viewing the Facebook newsfeed may expose individuals to social comparison information about others, which may lead to negative affect.

Previous research has considered these aspects to a degree, including Sagioglou and Greitemeyer (2014) who suggested that individuals rate spending time on Facebook as less meaningful and experience less positive mood than individuals in a browsing control condition (where participants spent time surfing the Internet but not using social networking sites) and no activity control condition. Using the Positive and Negative Affect Schedule (PANAS) these authors suggested that a less positive mood was experienced by those in the Facebook condition. However it is important to note that within this study the Facebook condition did not differentiate between different types of Facebook activity (the Facebook condition involved "posting, chatting, looking at pictures" Sagioglou & Greitemeyer, 2014 p.360). For this reason whilst mood may be less positive in the Facebook group, differences between mood in a condition where individuals have the opportunity to self enhance (such as profile editing) or to conduct social comparison (newsfeed viewing) were not

assessed and one might hypothesise patterns of mood change might be different between these activities.

2.13 Profile editing and self affirmation

Toma and Hancock (2013) noted that viewing one's own Facebook profile can act to restore feelings of self worth and integrity. This was examined from a self affirmation perspective, based on the idea that self affirmation is one of the ways individuals can act to maintain feelings of self worth, bringing to mind important aspects of the self-concept such as personal characteristics which one feels are truly valuable (Steele, 1988). Evidence of self affirmation occurring is reported when individuals accept feedback in a non-defensive manner as this will ultimately be useful in self reform (Sherman, & Hartson, 2011). In short individuals who have undergone a self affirmation task are reported to be more receptive and less defensive to self feedback, an effect which is typically assessed via writing essays around self values, (McQueen & Klein, 2006; Gonzales & Hancock, 2011)) but was illustrated in the context of Facebook via two studies.

The first began by instructing participants to prepare and deliver a short speech via video link followed by self affirmation tasks. The self affirmation segment of the study operated within a 2 by 2 design with a self affirmation condition (two groups: self affirmed or not) and self affirmation type condition (Facebook profile versus values essay). Within the Facebook self affirmation condition participants viewed their own Facebook profile whilst within the control condition they viewed a stranger's profile. In the value essay self affirmation condition participants ranked 6 values into personal importance and then wrote

about the one most important to them for 5 minutes, whilst in the values essay control condition participants wrote for 5 minutes about why the value they rated as least personally relevant may be relevant and important to a typical student. After this task all participants received generic negative feedback on their speech performance which they then rated for fairness and usefulness. It was reported that those who completed the self affirmation conditions were less defensive and more receptive to feedback (evidencing self affirming) and that self affirmation via viewing one's own Facebook profile led to comparable levels of self affirmation to the traditional self affirmation task (essay writing).

A second study revealed that after a threat to self worth (negative feedback received after a public speaking task) individuals were more likely to express a desire to browse their own Facebook profile of a choice of 5 Internet activities, an effect which was not observed when egos were not threatened (where neutral feedback was received on the task). These studies then acted to suggest that engagement with the Facebook profile may enable self affirmation and the associated restoring of feelings of self worth and self integrity.

2.14 Profile editing and self-esteem effects

Gentile et al., (2012) asked participants to edit their Facebook profile or to complete a control task involving 'Google maps'. The Facebook condition requested participants to spend fifteen minutes editing their Facebook profile. They then answered questions pertaining to the number of Facebook friends they had and the number of comments received on their most recent status update. Likert scale responses were taken about the extent to which the Facebook profile formed an accurate reflection of the self, the extent that

comments from friends improved mood, and whether the use of pictures by the user portrayed the image they wished to display. They also provided open ended responses to questions regarding how they might be perceived by others based on their profile page, and how their profile page enabled self-expression. The control condition spent time examining a Google map of the campus and answering questions about it. The Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988) and Rosenberg Self-Esteem Scale (Rosenberg, 1965) were then completed by all participants.

The authors reported findings around narcissism and of interest here reported that trait self-esteem was higher amongst the Facebook group than the control group. However it would appear from examining this study that a change in self-esteem was not measured: two groups differed in self-esteem after their respective tasks (profile editing versus the control task of viewing Google maps) and as such this study does not appear to consider how two groups may have differed in self-esteem prior to spending time on these tasks. These studies then indicate the need for research to investigate further into which activities impact the mood of Facebook users and why this might be.

Similarly Gonzales and Hancock (2011) noted that self-esteem enhancement can occur when individuals spend time viewing their own Facebook profile, with suggestion that those who edited their profile held higher self-esteem after this activity than those who did other tasks which will be elaborated on below. Although it should be noted that again this research did not appear to compare measures of self-esteem before and after the task to enable comparison of scores before and after, which may have strengthened the research findings.

Their research involved individuals randomly assigned to either view their own reflection in a mirror, to view their own Facebook profile or a control condition where participants only completed the dependent measures (the Rosenberg self-esteem scale). They suggested that those who had viewed their own Facebook profile held a higher level of self-esteem after this task than those in the other conditions. This was further emphasised by the fact that those who left their Facebook profile during the task held lower levels of self-esteem after the task than those who had spent the duration of the task viewing their Facebook profile. Whilst as they note , it is possible that self-esteem may be higher in this group due to the benefits of exposure to one's social contacts (Facebook friends), they suggest that this study evidences the ability of environments such as Facebook to permit individuals the opportunity to optimally self present to others and carefully craft a self image on Facebook. This may relate to the fact individuals can exploit the affordances of online communication to ensure they optimally self present to others (Walther, 1996). For example, when editing the Facebook profile physical gating features (such as present self appearance) decrease in importance (Zhao et al., 2008), with emphasis instead being placed on uploaded words and pictures.

As an asynchronous communication medium with no immediate requirement to respond, individuals can take time to choose images and words to optimise the opportunity for intended self presentation (Mehdizadeh, 2010). Research suggests that people do indeed make efforts to portray an intended self image on Facebook and this intended image influences the type of content presented (Peluchette & Karl, 2010). Research by Peluchette and Karl (2010) suggested

that students who believed they portrayed a self image of the self as hardworking were less likely to post inappropriate content (such as nudity) than those who did not try to portray a hardworking self image on Facebook. Those who attempted to portray the self as sexually appealing, wild or offensive were more likely to display inappropriate profile content than those who did not aim to portray themselves in this manner. Similarly research suggests that individuals take time to prepare and edit content before it is viewed by others (Valkenburg & Peter 2011), thus illustrating how individuals have both more time and a greater ability to control the cues to the self in these settings than they do in offline interactions.

It may be that this increased control over the cues to the self which are given to others (Joinson, 2004) can lead to a different psychological outcome to other Facebook activities. That is, since profile editing increases the opportunity for individuals to promote a self-image of their choosing, this may have a different emotional impact to other Facebook activities. Specifically, activities such as editing the Facebook profile may, through the ability to optimally self present, lead to positive affect, whilst other activities such as those involving exposure to social comparison (such as viewing the newsfeed) may not, remembering that information about others is likely to be idealised and overly positive self information (Lee, 2014; Fox & Moreland, 2015) and viewing this content may therefore lead to negative affect.

2.15 Social comparison on Facebook

Haferhamp and Kramer (2011) demonstrated how feelings of inferiority can occur in Facebook users if they view an attractive profile holder. The reasons

for this may relate to the increased opportunity for social comparisons to take place on Facebook (Fox & Moreland, 2015). However upward comparisons do not in themselves always lead to negative affect, and research suggests that either direction can cause positive or negative emotional consequences (Buunk et al, 1990). It is suggested that the affective response to this comparison relates to whether assimilation or contrast to the comparison other takes place (Collins, 1996). To put it another way, whether responses to upward social comparisons are positive or negative may relate to whether the comparison other is perceived as similar or different to the self. If the comparison other is perceived as similar to the self then the social comparison is more likely to elicit positive affect than if the comparison other is perceived as vastly different with qualities one could not achieve. This may occur because of a discrepancy occurring between perceptions of what one could achieve and what one would like to achieve on the comparison dimension. Lockwood and Kunda (1997) suggested that when comparing the self to super-stars relevance to the self is an important dimension, but self enhancement only occurs when similar successes appear achievable, whereas self deflation occurs if the achievement appears out of reach. This would suggest therefore that affective responses to social comparison relate to how achievable a comparison dimension is perceived to be.

Despite this, Facebook research suggests that social comparisons conducted on Facebook tend to elicit negative affect (Lee, 2014; Vogel et al., 2014; Fox and Moreland, 2015). For example, Lee (2014) asked participants to reflect on how they thought they would feel when they were looking at photos or Facebook

newsfeeds and findings suggest that those with a high level of social comparison tendency felt worse after conducting social comparisons on Facebook. This may relate to the content of the information viewed on Facebook, with suggestion that this content may have narcissistic qualities (Wickel, 2015). Researchers suggest that Facebook content written by narcissistic individuals is often more self promoting and self aggrandising than content written by those who are less narcissistic (Buffardi, 2011; Carpenter, 2012), and that this may cause a contrast effect to the comparison other, resulting in negative mood. Further, research suggests that narcissists may engage in more frequent self-promotion on Facebook than less narcissistic individuals (Buffardi and Campbell, 2008) and have more Facebook friends (Bergman et al., 2011), and as such individuals are likely to be disproportionately exposed to narcissistic content on Facebook (Carpenter, 2012). Whilst not all researchers agree that narcissists may be more active on Facebook (Skues, Williams & Wise, 2012) there is a degree of agreement that the Facebook environment encourages a preoccupation with the self (Wallace, 2015) in a particularly narcissistic manner (Wickel, 2015). This may help explain why viewing idealised others and forming social comparisons on Facebook may lead to negative affect. In other words, narcissists are typically self-aggrandising and are therefore likely to boast about their accomplishments and successes. Exposure to this type of information when, for example, viewing the content of a narcissistic Facebook user, may lead to an upward social comparison, leaving the individual making this comparison feeling inadequate. This type of response may be assessed by examining changes in state (or short term) self-esteem after such activities.

2.16 State self-esteem and social comparison on Facebook

Greitemeyer (2016) considered state self-esteem in Facebook users. State self-esteem considers individuals current thoughts about the self in performance, appearance and social domains, with emphasis on the fact that these self views are susceptible to short term change (Heatherton & Polivy, 1991). Within this research participants either viewed a Facebook profile of an individual who had many Facebook friends (constituting an upward comparison) or few Facebook friends (a downward comparison). Findings suggested that no effect was found for state self-esteem. In this study the three constituents of state self-esteem were averaged and so individual contributions of the performance, appearance and social aspects of state self-esteem were not assessed, and further, mock profiles were used. It is possible that using the separate measures of performance, appearance and Social self-esteem may have provided more revealing results than a sum measure, however a sum analysis prevents this consideration. Further, the use of mock profiles and individuals' responses to information displayed on such profiles may not provide the most realistic reactions from participants. Previous research has noted that the impact of comparisons relate to how relevant the choice of comparison target is (Goethals & Darley, 1977; Goethals & Klein, 2000) it may therefore be the case that using Facebook profiles of real Facebook friends of the individual participants may have provided a more ecologically valid measure of the types of impact viewing Facebook profiles holds.

Similarly Vogel et al. (2015; study 2) examined state self-esteem within a Facebook experiment. Those individuals who compared themselves frequently

to others (held a high social comparison tendency) reported lower self perceptions and lower state self-esteem after viewing an acquaintance's Facebook profile than those who had a lower social comparison tendency. Those individuals who viewed their own Facebook profile had a higher level of positive affect than those who viewed an acquaintance's profile, with the greatest level of negative affect amongst those with a high social comparison tendency who viewed an acquaintance's profile. This would suggest that viewing one's own Facebook profile may lead to positive affect, whilst viewing the Facebook profile of another may lead to negative affect if one is especially prone to comparing the self to others. This may be because individuals have increased opportunity to optimise a self-presentation (Walther, 1996) or perhaps viewing the Facebook profile reminds individuals of social connections - a point made by Gonzales and Hancock (2011). Where in contrast, viewing an acquaintance's Facebook profile for those with high social comparison tendency appears to lead to negative affect. This may reflect the fact that much information on Facebook represents an upward comparison (Haferkamp & Kramer, 2011), and further that when a Facebook friend is an acquaintance, information on the Facebook profile holds more weight when evaluating the profile owner, due to the reduced amount of real life information which may be used to evaluate the profile holder (see Chou & Edge 2012). However, this study only assessed mood and state self-esteem after the interventions rather than a direct measure of change via examining differences in these areas before and after. This is problematic because again, groups may have differed in mood and state self-esteem prior to the intervention, but obtaining data

pertaining only to mood or self-esteem after intervention prevents a comparison of before and after.

Reviewing these studies suggests that a more comprehensive consideration of how different Facebook activities may impact individuals differently is required, in a way which permits direct comparison of the impact on the individual, such as before and after mood comparisons. The impact of individual differences in tendency to social comparison appears to be a predictor of impact of Facebook activities on mood, but because this has only been considered in a limited way (such as how participants think they would feel, Lee, 2014) this requires further examination. State self-esteem though, a variable of several facets, has often been considered as a sum variable (such as Greitemeyer, 2016) and examination of the potential role of its component parts in the impact of different Facebook activities is required, representing one of several factors requiring further consideration.

2.17 Variations in self-presentational techniques on Facebook

The potential role of individual differences in self presentational techniques and attempts on Facebook is also a relevant consideration. Examination of variations, for example in language choice on Facebook may offer insight into why individuals low and high in self-evaluation variables may differ in the extent to which engagement with Facebook impacts them emotionally in terms of affect and mood change. For example Forest and Wood (2012) found that those with low self-esteem were less positively received when their status updates were viewed by raters than those with higher self-esteem, and as such factors such as the minutiae of the manner of self presentation on Facebook,

such as the types of language used, may act to inform opinions others form of the user, responses to the user, and in turn impact the user's Facebook experience. However this extends beyond the Facebook experience, as of course there are other types of social media environments that individuals may choose to engage with, including those which are less tethered to the offline identity.

2.18 More anonymous social media sites

Whilst many social media sites are nonymous in nature (such as Facebook) or display easily accessed identifiable information about the user (such as Twitter), more anonymous social media settings do exist, where the concept of anchored reality becomes less important, and the ability to be more creative in self expression may exist. An example of this is Whisper, a mobile app. The website states that this app functions to enable individuals to share "real thoughts and feelings, without identities," and proposes that "happiness starts when you get to be your real self" (Whisper, 2016). Although research into this area is limited, it suggests that individuals are less limited in their self presentations (Wang et al, 2014) compared to more anchored social media sites, such as Twitter. An analysis of Whispers compared to tweets (Twitter updates) has revealed that Whispers contain more negative emotions (including sadness and anger) and are more centred around wants, needs, and wishes (Correa et al., 2015). This would suggest that in these more anonymous environments individuals may be permitted to become less constrained in their self presentations. This might hold particular benefits for some individuals, for example research suggests that those with low levels of self-concept clarity

prefer to interact in online environments where they can engage with those not known offline (Matsuba, 2006) and this may therefore relate to the amount of creativity of self expression, such as deviation from the offline self, which is enabled.

2.19 Impression formation on social media

It may be anticipated that the impressions individuals' form of others in anchored environments may differ from those formed in environments where increased idealisation of self attributes or flexibility around self presentation is enabled. Research with Facebook users has revealed that those individuals whose Facebook friends are primarily those who they do not know well offline, are more likely to succumb to heuristics (i.e. mental shortcuts or 'rules of thumb') when evaluating the lives of others (Chou & Edge, 2012). Specifically this research suggested that when forming evaluations these individuals placed excessive emphasis on the overly positive content posted by these others on Facebook, concluding that others are both happier than they are, and having 'better lives' (Chou & Edge, 2012). If this type of impression is formed on a more nonymous environment such as Facebook, what type of impressions will be formed of users presenting the self in an online environment where there exists a greater ability to idealise a self presentation?

2.20 The first study

The above review highlights how individuals' abilities to idealise a self presentation may vary according to the type of social media site engaged with, and potentially by individual differences in self-evaluation variables. Whilst Facebook remains a hugely popular social networking site (Duggan et al., 2015)

research into how an individuals' self-evaluations influence specific types of activities engaged with on Facebook has received research attention within limited domains. Self-esteem is widely considered in the context of types of activities individuals may choose to engage with. However the extent to which individuals compare to others, despite the longstanding evidence to suggest a relationship to self-esteem has received limited research attention with self-concept clarity far less so. The first study aims to provide a more comprehensive picture of the ways in which these self-evaluation variables influence types of activities engaged with on Facebook, and also how these relate to how intensely Facebook is used by individuals. This study also intends to examine the type of mood individuals' experience whilst spending time on their Facebook activities of choice to ascertain if these self-evaluation factors have a role here also. This study will gain information around how Facebook is used by individuals each day for a period of days via use of a specifically designed daily diary. Individuals will complete this diary assessing the extent to which they engage with a range of Facebook features each day and document their mood during use of the site.

Chapter Three: Self-evaluation variables, activities undertaken on Facebook and mood after site use.

3.1 Introduction

Research into the predictive value of self evaluation variables on activities undertaken on Facebook and mood during Facebook use have been limited in both their depth and scope. Studies reviewed within the literature review would appear to suggest that upward comparison on Facebook may be emotionally problematic for individuals (Haferkamp & Kramer, 2011; Vogel et al., 2015), that some people may engage in social comparison on Facebook more frequently and that these individuals are the ones most likely to report negative feelings resulting from comparisons on Facebook (Lee, 2014). The review had also noted that low and high self-esteem individuals might differ in what they activities they engage with on social media (Wang et al., 2012) the benefits they perceive to Facebook use and how they use the site (Tazghini & Siedlecki, 2013). The review also permits suggestion that self-esteem and frequency of Facebook use may influence activities undertaken on the site (Vogel et al., 2015), as may the extent to which individuals compare with others, and other self-evaluation variables such as clarity of self-concept (Lee, 2014). Despite this previous research has not provided a comprehensive picture of what factors might impact wellbeing in this context. What is apparent is that members do not use the site homogenously (Smock et al. 2012; Tazghini & Siedlecki, 2013; Wang et al., 2012) and to understand how using the site might impact on wellbeing a more nuanced approach is needed to unpack specific activities and their particular link to such wellbeing. In other words a clearer picture of how individuals' self-evaluation variables influence choice of site

activity and how these different aspects of Facebook activity may impact mood as a function of such variables is required.

3.2 The current study.

This study aims to address some of the issues noted through the review of the extant literature. First, participants will be asked about their engagement with their own Facebook account rather than using mocked up profiles. This will be an improvement on previous research since one of the fundamental aspects of social comparison has been around perceived similarity between the self and the comparison other. Even in early theorising it was proposed that if a comparison other was too dissimilar to the self then social comparison would not be undertaken (Festinger, 1954). As such it may be suggested that participants viewing a mock profile may be less likely to perceive the mock profile holder as similar to the self and a useful source of comparison compared to looking at profiles of genuine Facebook friends, and therefore may not conduct social comparisons with the mock profile holder. A similar point is raised by Cohen and Blaszczynski (2015) who proposed that research using mock Facebook profiles lacks both ecological validity and the peer relevant component of Facebook use. That is, information about real and therefore relevant friends is simulated but not present.

The current research will consider a wide range of self-evaluation variables, since all the research above has suggested their addition to this study would be valuable. Therefore, tendency to compare with others, self-esteem, self-concept clarity and Facebook Intensity will be used to examine the extent to which these variables predict use of a variety of Facebook activities, and the extent to

which these predict mood during site engagement. Facebook use will be assessed over a number of days rather than asking for retrospective judgements around general Facebook use, or anticipating how one may feel after spending time on the site.

As such, individuals will be asked to complete self-evaluation variables (measures of self-esteem, clarity of self-concept and social comparison tendency) and assess Facebook Intensity (perceptions of the site and value to the individual). Individuals will then be requested to keep a daily diary of the extent to which they spend time completing various Facebook activities and to document the extent to which they experienced various mood states. It is anticipated that this method will provide a more reliable account of how individuals engage with the site compared to self-report measures which rely on people assessing previous behaviour accurately.

Based on the review of literature above the following effects will be predicted

H1. Facebook intensity will predict viewing the newsfeed and the profiles of others in a positive direction.

H2. Social comparison tendency will predict viewing both the newsfeed and the profiles of others in a positive direction.

H3. Self-concept clarity will predict spending time viewing the Facebook newsfeed and time viewing the profiles of others in a negative direction.

H4. Self-esteem will predict commenting or liking the content of others in a positive direction.

H5. Self-esteem will predict viewing the profiles of others and viewing the Facebook newsfeed in a negative direction.

H6. Those with high self-esteem report greater positive mood during Facebook use than those with low self-esteem.

H7. Those with a high level of social comparison tendency will report more negative mood when spending time on Facebook than those with a lower level of social comparison tendency.

H8. Individuals with a low level of self-concept clarity will report more negative mood when spending time on Facebook than those with a clearer self-concept

3.3 Method

3.3.1 Design

This study used a repeated measures design. There were four independent variables: self-esteem, self-concept clarity, social comparison tendency and Facebook intensity. The dependent variables were the Facebook activity items (e.g. looking at the newsfeed) and mood during site use semantic differential items (e.g. sad-happy), defined as the extent to which participants engaged in these Facebook activities, (from 1-7; strongly disagree to strongly agree) and the extent to which they experienced these different affective states during site use. Within the correlation analyses the self evaluation variables (self-esteem, clarity of self-concept, tendency to social comparison and Facebook intensity) were the dependent measures.

Participants completed the independent measures before completing the Facebook use questionnaire over five consecutive evenings.

3.3.2 Participants

100 participants began the study but only 65 completed it. Participants were recruited primarily from a large West Midlands University (80% female; n80, 20% male; n20) with a mean age of 27.35 years (SD= 10.53) aged from 18-61 years. The majority of participants were recruited from the Psychology Students Participant Pool at the University and received course credit for participation. The remainder were other students from other courses in the University, or other Facebook users obtained via snowball sampling.

3.3.3 Materials

3.3.3.1 Iowa-Netherlands Comparison Orientation Scale INCOM (Gibbons & Buunk, 1999). See Appendix 10.1.2

The Iowa-Netherlands Comparison Orientation Scale INCOM (Gibbons & Buunk, 1999) is a measure of social comparison tendency. The scale has 11 items and respondents are required to indicate their agreement with a series of statements, on a 5 item scale ranging from 'I disagree strongly' to 'I agree strongly'. Example items include 'I often compare how I am doing socially (e.g., social skills, popularity) with other people', and 'I often compare myself with others with respect to what I have accomplished in life'. Some items are reverse scored. This scale reports a Cronbach's alpha of .81 in the current study.

3.3.3.2 Rosenberg self-esteem scale (Rosenberg, 1965). See Appendix 10.1.3

Self-esteem was assessed via the Rosenberg self-esteem scale (Rosenberg, 1965), whereby respondents indicate their agreement with ten scenarios on a 4 point scale from 'strongly agree' to 'strongly disagree'. Items include 'on the whole, I am satisfied with myself' and 'at times, I think I am no good at all.' Several items are reverse scored. This is a widely used scale, although there has been contention over its dimensionality. Whilst Rosenberg developed the scale to measure a global self-esteem factor defined as a uni-dimensional construct (Rosenberg, 1965) others have disputed this including suggestion that there is in fact a two factor structure of the scale and that the measure assesses two interrelated opposing constructs of a positive and negative self view (see Tomás and Oliver, 1999). The Cronbach Alpha for the current study was .92.

3.3.3.3 Self-concept clarity scale (Campbell et al., 1996). See Appendix 10.1.4

Clarity of self-concept was assessed via a 12 item Self-concept clarity scale (Campbell et al., 1996). Self-concept clarity refers to the extent to which perceptions of the self-concept are clearly and confidently defined, internally consistent and temporarily stable (Campbell et al., 1996). Respondents indicate their agreement on a 5 point Likert scale ('strongly disagree' to 'strongly agree'). Scores are obtained by the sum of the items, with higher scores

indicating higher self-concept clarity. The scale has a Cronbach's alpha of .88 within the current study.

3.3.3.4 The Facebook Intensity Scale (Ellison, Steinfield & Lampe, 2007). See Appendix 10.1.5

This scale includes items regarding the amount of time per day typically spent on Facebook (an open question requesting number of minutes spent;) and the number of Facebook friends (again assessed as an open question), as well as items concerning the individual's attitude towards the site, the extent to which it is integrated into daily life and how important engagement with the site is to them. These latter items, the Facebook intensity items, have response scales from 1-5 ('strongly disagree' to 'strongly agree'), for example 'Facebook has become part of my daily routine.' This scale reports a Cronbach's alpha .85 within the current study.

3.3.3.5 Facebook Use Questionnaire. See Appendix 10.1.6

Participants provided demographic information in the form of age, gender, and duration of Facebook use. Activities undertaken on Facebook over the course of a day and feelings during site use were assessed via the Facebook use questionnaire. This measure was devised for this study due to the absence of appropriate instruments. Most questions asked participants to assess the extent to which they engaged in a series Facebook activities that day (from 1 strongly disagree to 7 strongly agree). These questions covered fifteen different Facebook activities which participants rated the extent to which they had engaged in them on that day. Participants rated the extent to which they had

spent time 'posting pictures (of myself) today'; 'looking at people's photos today'; 'reading and replying to messages from others today'; 'posting status updates today'; 'looking through the newsfeed today'; 'posting on my friends' walls today'; 'looking at/reading other people's profiles today'; 'looking up old contacts to friend'; 'commenting on / liking others' posts/pictures today'; 'replying to messages from others today'; 'editing my profile today'; 'finding out what my friends were up to'; 'editing pictures today'; 'looking at what comments people had made about my photos today;' and 'looking for new contacts'.

Mood experienced during site use were assessed via a semantic differential scale (1-7), and included emotions such as 'sad-happy', 'bored-stimulated'. Some items were reverse scored (such as 'relaxed-stressed'). Participants completed this measure each day for five consecutive days to provide a more comprehensive measure of activities undertaken on Facebook and mood experienced during site use than has often been used in previous research. This type of scale has been employed in similar studies (see Pempek et al., 2009; Tazghini and Siedlecki, 2013), however it does not appear that mood during site use is specifically assessed within similar studies.

The Facebook activities section of the questionnaire was compiled from a list of Facebook activities observed as being available to Facebook users at the time of compilation. This questionnaire was not piloted, however it achieved adequate levels of reliability: The Cronbach Alpha for the Facebook activity section of the scale, (formed from the mean of the scores from the diary entries as used for analysis, see 3.5.2;) is .87, whilst the Cronbach Alpha for the semantic

differential mood items (again formed from the mean used for analysis, see 3.5.3;) is .95.

3.4 Procedure

Participants were provided with an information sheet outlining details of the study and their role within it. Informed consent was gained and participants then provided demographic information and completed the measures above: the INCOM (Gibbons and Buunk, 1999), Self-esteem Questionnaire (Rosenberg, 1965), Self-Concept Clarity Scale (Campbell et al., 1996), and The Facebook Intensity Scale (Ellison, Steinfield and Lampe, 2007). Participants took away with them five copies of the Facebook Use Questionnaire. They were instructed to complete one Facebook Use Questionnaire each evening for five consecutive evenings. It is duly acknowledged that counterbalancing did not take place to distinguish between week-day versus weekend use, and indeed it may be possible that styles of usage and amount of usage may vary in this manner. Once completed these questionnaires were returned anonymously to the experimenter by posting them into the pigeonhole in the experimenter's office.

Scores for self-esteem, social comparison tendency, Facebook Intensity and self-concept clarity were computed into total scores as per original author guidelines.

3.5 Results

Participation packs were given to 100 participants, however only 65 of these participation packs were returned to the experimenter. As such, the response rate for returning of Facebook diaries was lower than desired (65%). The

strategy of anonymous data collection precluded the ability to request the return of diaries, resulting in a limitation of a large quantity of Facebook diaries lost to follow up.

3.5.1 Correlation analysis

To examine how the self-evaluation variables of self-esteem, self-concept clarity and social comparison tendency and Facebook Intensity correlate, Pearson's Correlation analyses were conducted with listwise exclusion. Table 1 displays these statistics.

These findings suggest that those who had a high tendency to compare to others felt higher levels of Facebook Intensity, and also had low levels of self-esteem, respectively. It would seem then that those with a low level of clarity about the self compare themselves more to others, and have lower self-esteem.

Table 1. *Correlation coefficients, Cronbach's alpha, and descriptive statistics.*

Variable	1	2	3	4
SE	-			
SCC	.667**	-		
SCT	-.298**	-.408**	-	
FBI	.032	-.064	.236*	-
M	20.12	38.33	36.75	3.32
SD	6.01	9.60	6.49	0.83
Alpha	0.92	0.88	0.81	0.85

SE = Self-esteem (rated 1–4), SCC = Self-concept clarity (rated 1–5),
SCT = Social comparison tendency (rated 1–5), FBI = Facebook intensity (rated 1–5).

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

3.5.2 Principal Components Analysis of mood during Facebook use

The type of mood participants experienced whilst spending time on Facebook was examined next. This was considered using Principal Components Analysis (PCA); part of a family of techniques within factor analysis. PCA is a data reduction technique considering inter-correlations of variables and grouping them into factors. There is debate over the most suitable technique for factor analysis, including between the use of Factor Analysis (FA) and Principal Components Analysis (PCA). PCA was chosen on this occasion since it is argued to be the preferable choice of the two options if a summary of the dataset is desired (Tabachnick & Fidell, 2012) and as such believed to be applicable to this case.

Recommendations for overall sample size for techniques of this nature are significantly greater than the sample size within this dataset. For example, Tabachnick and Fidell, (2012) recommend at least 300 cases for factor analysis. However, it is noted that Guadagnoli and Velicer (1988) stated that a factor which has four or more loadings exceeding .6 can be regarded as reliable regardless of sample size. Since the factor obtained as a result of this PCA did meet this specification (see Table 1) and due to the exploratory nature of the work undertaken here, the analysis was conducted.

The mean scores for the 12 semantic differential (affect) items were therefore subjected to Principal Components Analysis with orthogonal rotation (Varimax). Orthogonal rotation was chosen since it was anticipated that factors would be

discrete rather than correlated; Field (2013) recommends in this instance to use Varimax rotation rather than oblique alternatives.

3.5.2.1 Initial PCA analysis.

Checks on the semantic differential mood variables using PP plots suggested that these variables approximated a normal distribution. Means and standard deviations for the semantic differential mood items are presented in Table 2.

Correlations between the variables are displayed in the SPSS output of the correlation matrix (See Appendix 10.1.2.1). According to Field (2013) any variables that only have a few correlations greater than .3 are problematic. It was observed that the 'bored-stimulated' variable had several lower than this number, and thus this variable may present a problem. At this stage analysis is continued and discussed further later. Muliticollinearity was not a concern as none of the correlation coefficients exceeded .9 (Field, 2013).

Table 2*: Mean values (standard deviation in parenthesis) for all of the semantic differential mood variables*

Variable	Mean (standard deviation)
Mean sad-happy	5.13 (1.13)
Mean relaxed-stressed (reversed	4.92 (1.26)
Mean bored-stimulated	3.65 (1.25)
Mean unworried-anxious (reversed)	5.08 (1.34)
Mean informed-uninformed (reversed)	4.47 (1.15)
Mean angry-calm	5.41(1.18)
Mean self doubt-confident	4.96 (1.36)
Mean positive-negative (reversed	5.10 (1.35)
Mean unloved- loved	5.15 (1.39)
Mean lonely-sociable	4.95 (1.33)
Mean secure-jealous (reversed)	5.20 (1.31)
Mean ashamed-proud	4.93(1.23)

The determinant of the correlation matrix (displayed at the base of the table in Appendix 10.1.2.1) exceeded the requirement of exceeding 0.00001 and as such there were no particular problems with muliticollinearity or singularity of the variables (Field, 2013).

Kaiser-Meyer-Olkin (KMO), a measure of sampling adequacy, was .90, (the SPSS output for this is in Appendix 10.1.2.2) suggesting that the correlations amongst the data should permit reliable factors (Field, 2013), supported by

Hutcheson and Sofroniou (1999) who suggest that values in the .90s are 'marvellous'.

The KMO for individual variables was checked by examining the diagonal of the anti image correlation within the anti image matrices (see Appendix 10.1.2.3). These were all above the threshold of .5 (Field, 2013). Bartlett's test was used to ascertain if any correlations existed which were too low to be suitable for this analysis, with the accepted significance level being less than 0.05 (Field, 2013). This test was significant (<0.001) which acted to confirm correlations exist within the variables (see Appendix 10.1.2.2).

The SPSS output within Appendix 10.1.2.4 (the initial eigenvalues section) lists the eigenvalues before extraction, with the first factor explaining 66.87% of the variance, followed by 9.45% for the second, and smaller amounts for the remaining 10 factors. The extraction sums of squared loadings (again within the Appendix 10.1.2.4) displays the factors extracted, which all have eigenvalues greater than 1, listing 2 factors, also displaying the percentage of variance explained. Finally 'the rotation sums of squared loadings' (within Appendix 10.1.2.5) displays the percentage of variance explained by each factor after rotation, 65.22% and 11.10% respectively for the first and second factor. Subsequently before rotation factor 1 explained 66.87% whilst factor 2 explained 9.45%; after rotation they explained 65.22% and 11.10%.

Table 3 displays the communalities before and after extraction, illustrating the proportion of common variance within each variable.

Table 3: *Communalities before and after extraction*

Variable	Initial	Extraction
Mean sad-happy	1.000	.788
Mean relaxed-stressed	1.000	.768
Mean bored-stimulated	1.000	.801
Mean unworried-anxious	1.000	.798
Mean informed-uninformed	1.000	.383
Mean angry-calm	1.000	.745
Mean self-doubt-confident	1.000	.776
Mean positive-negative	1.000	.891
Mean unloved-loved	1.000	.765
Mean lonely-sociable	1.000	.834
Mean secure- jealous	1.000	.829
Mean ashamed-proud	1.000	.781

The component matrix before rotation is displayed below in Table 4. This represents the loadings of each variable on each factor. Most load onto factor one, although two load heavily onto both.

Table 4. *Component matrix before rotation*

	Component	
Variable	1	2
Mean positive-negative	.942	
Mean secure-jealous	.910	
Mean sad-happy	.886	
Mean ashamed-proud	.881	
Mean self-doubt-confident	.881	
Mean lonely-sociable	.875	
Mean angry-calm	.855	
Mean unloved-loved	.845	
Mean unworried-anxious	.840	-.304
Mean relaxed-stressed	.797	-.365
Mean informed-uninformed	.618	
Mean bored-stimulated		.874

The scree plot is in Appendix 10.1.2.6 and suggests a two factor solution.

The correlation coefficients between all of the items based on the factor model are displayed in the 'reproduced correlations' output in the Appendix 10.1.2.7, with highlighted sections displaying the communalities after extraction for each of the variables as well as the difference between the observed and anticipated correlation coefficients within the 'residuals' section of the table. Appendix 10.1.2.7 provides more detail on this. The rotated component matrix is

displayed in Table 5 below. This is the matrix of the factor loadings for each variable on each factor calculated after rotation.

Finally the Component Transformation Matrix displays the component correlation matrix prior to and after rotation and is displayed in Appendix 10.1.2.8

Table 5: *Rotated Component Matrix*

	Component	
Variable	1	2
Mean positive-negative	.939	
Mean secure-jealous	.896	
Mean unworried-anxious	.880	
Mean self-doubt-confident	.871	
Mean angry-calm	.862	
Mean sad-happy	.862	
Mean ashamed-proud	.858	
Mean relaxed-stressed	.847	
Mean lonely-sociable	.819	.405
Mean unloved-loved	.795	.366
Mean informed-uninformed	.605	
Mean bored-stimulated		.894

3.5.2.2 Factor Analysis with items removed

Since several variables either loaded heavily onto both factors (informed-uninformed, unloved-loved, lonely-sociable) and one ambiguous item (bored-stimulated) identified as potentially presenting a problem in the initial analysis, the analysis was rerun with these items removed.

The correlation matrix (displayed in Appendix 10.1.2.9) suggested that no variables held low correlations, whilst the correlation coefficients themselves did not exceed .9 and so did not present concerns around muliticollinearity. The determinant of the correlation matrix also exceeded requirements (see the base on the table in Appendix 10.1.2.9). This suggested therefore that the variables correlated reasonably and that no further items required removal. KMO remained at .90, whilst Bartlett's test remained significant (see Appendix 10.1.2.10). The anti image matrices are displayed in Appendix 10.1.2.11. Examining the anti-image correlations permitted checks of the KMO for individual variables. All of these exceeded the criteria of greater than .5

The communalities before and after extraction are displayed in Table 6.

Table 6: *Communalities before and after extraction*

Variable	Initial	Extraction
Mean sad-happy	1.000	.770
Mean relaxed-stressed	1.000	.716
Mean unworried-anxious	1.000	.777
Mean angry-calm	1.000	.754
Mean self-doubt-confident	1.000	.784
Mean positive-negative	1.000	.902
Mean secure-jealous	1.000	.813
Mean ashamed-proud	1.000	.745

The initial eigenvalues section of the SPSS output (see Appendix 10.1.2.12) lists the eigenvalues before extraction, with the first factor explaining 78.25% of the variance, followed by 6.43% for the second, and smaller amounts for the remaining 6 factors.

The 'extraction sums of squared loadings' section (Appendix 10.1.2.13) displays the factors extracted, which all have eigenvalues greater than 1, displaying a single factor, and also displaying the percentage of variance explained. This resulted in a single factor being extracted and so the solution was not rotated. Despite this, the scree plot displayed in Appendix 10.1.2.14suggested a two factor solution.

The Component matrix before rotation – the loadings of each variable on the factor - is displayed below.

Table 7: *Component matrix before rotation*

Variable	Component
	1
Mean positive-negative	.950
Mean secure-jealous	.901
Mean self-doubt-confident	.885
Mean unworried-anxious	.882
Mean sad-happy	.878
Mean angry-calm	.869
Mean ashamed-proud	.863
Mean relaxed-stressed	.846

The Reproduced Correlations section of the SPSS output is in the Appendix 10.3.1, with the residuals section suggesting that the differences between the observed correlation coefficients and the ones predicted by the model did not represent grounds for concern.

3.5.2.3 Comparison of the two analyses

Communalities before and after extraction were similar in both analyses and as was the component matrix for first factor. Initial eigenvalues before extraction explained a higher percentage in the second PCA (78.25%) than the first (66.87%). However the fact a one factor solution was created in the second analysis means that the percentage of variance explained after rotation was not comparable between the two analyses. Subsequently the initial PCA output was retained for further analyses.

3.5.2.4 Positive mood factor

Recall the first PCA suggested a two factor solution. However two of the three variables that formed the second factor loaded heavily onto the first factor, whilst the remaining variable for factor two did not correlate notably with any other variables (Bored-stimulated). In order to obtain parsimonious instrument only the first factor was retained. Within this factor the items that loaded onto the second factor were removed and one item which held a lower loading than the rest (Informed-uninformed – reversed) and also appeared to assess a different measure of affect to the other items within the factor was deleted. After removal of these three items factor one contained: Positive-negative, (reversed) Secure-jealous (reversed), Unworried-anxious, (reversed) Self-doubt-confident, Angry-calm, Sad-happy, Ashamed-proud and Relaxed-stressed (reversed). Examination of these factor loadings suggested a perception of positive mood. The Cronbach Alpha for this factor was .960. Table 8 displays means and standard deviations for all variables forming the positive mood factor.

Table 8: *Mean values (standard deviation in parenthesis) for all variables forming the positive mood factor*

Variable	Mean (standard deviation)
Positive-negative (reversed) mean score	5.10 (1.35)
Secure-jealous (reversed) mean score	5.21 (1.31)
Unworried-anxious (reversed) mean score	5.08 (1.34)
Self-doubt-confident mean score	4.96 (1.36)
Angry-calm mean score	5.41 (1.18)
Sad-happy mean score	5.13 (1.13)
Ashamed-proud mean score	4.93 (1.23)
Relaxed-stressed (reversed) mean score	4.92 (1.26)

3.5.3 Multiple regression analyses of the predictive value of self-evaluation variables and Facebook Intensity on Facebook activities chosen.

A series of linear regression analyses were conducted with enter method, in order to ascertain if self-evaluation variables (self-esteem, clarity of self-

concept, social comparison tendency) and Facebook Intensity predicted engagement with the various Facebook activities. Mean values for each of the various Facebook activities were derived by obtaining the average score across the 5 days (or three days amongst those who do not use the site everyday) and this average score for each of the Facebook activities represented the intended dependent variable. However examination of the data via pp plots suggested that distribution of a number of these dependent variables were skewed, notably that individuals tended not to engage in certain Facebook activities very frequently. These are presented in Table 9, and due to the skewed nature of these variables they were not entered into regression analyses. This data was not used for further analysis, however it was used for contemplation within the discussion of the study, acknowledging that these activities represented a series of Facebook activities not commonly engaged in, and considering what qualities these activities may have which differ from the normally distributed Facebook activities. Of the Facebook activities that remained (listed in Table 10) the average score for each of the Facebook activities were entered as dependent variables in separate regression analyses with self-concept clarity, social comparison tendency, self-esteem and Facebook Intensity scores entered as predictors.

Power analysis for a multiple regression with four predictors (self-esteem, self-concept clarity, tendency to social comparison and Facebook intensity) was conducted in G*Power to determine a sufficient sample size using an alpha of 0.05, a power of 0.80, and a medium effect size (*f2* = 0.15) (Faul, Erdfelder, Buchner & Lang, 2013). Based on the aforementioned assumptions, the desired

sample size was 85 participants. However changes to the Facebook platform during data collection meant that data collection ended before a fully completed sample of 85 was obtained: whilst 100 participants engaged with the study before changes to the platform, only 65 fully completed the study. Based on this information results are interpreted with caution.

Table 9. *Minimum, maximum and mode for all Facebook activities excluded from analyses due to non-normal distribution*

	Minimum	Maximum	Mode
Posting pictures (of myself) mean score	1.00	4.20	1.00
Posting status updates mean score	1.00	6.00	1.00
Posting on friends' walls mean score	1.00	6.00	1.00
Looking up old contacts mean score	1.00	5.80	1.00
Editing my profile mean score	1.00	3.80	1.00
Editing pictures mean score	1.00	4.60	1.00
Looking at comments made about my photos mean score	1.00	6.60	1.00
Looking for new contacts mean score	1.00	5.80	1.00

Table 10: *Mean values (standard deviations in parenthesis) for all Facebook activities entered into regression analyses*

	Mean (Standard deviation)
looking at people's photos mean score	3.38 (1.30)
reading and replying to messages from others mean score	3.56 (1.55)
looking through the newsfeed mean score	5.06 (1.58)
looking at/reading other people's profiles mean score	2.80 (1.47)
commenting on / liking others' posts/pictures mean score	3.60 (1.48)
replying to messages from others mean score	3.53 (1.63)
finding out what my friends were up to mean score	3.55 (1.52)

3.5.3.1 Multiple regression considerations

A notable issue at this stage concerns sample size, with the potential for results not to be generalisable if sample sizes are too small. Guidelines are variable for the recommendations for sample size for multiple regression. Stevens (1996) suggests that for a reliable equation within social sciences research around 15

participants per predictor is acceptable. It is noted that some recommend considerably more and this would have been preferable. However it is noted that the 65 participants in this study are considered within the context of four predictor variables and as such the analysis is attempted, due to the exploratory nature of the research and acknowledging this issue by drawing more tentative conclusions than would have been the case with a larger sample size.

In addition, multiple regression requires consideration around issues of muliticollinearity, that is where variables are overly correlated, with recommendation that this should not exceed .9 (Field, 2013). Muliticollinearity can also be assessed by the variance inflation factor (VIF), with recommendations that the largest VIF value in the model should not exceed 10 (Field, 2013) and this was met. Related is the measure of tolerance which assesses the correlation between predictor variables with values below 0.1 representing an issue for the analysis (Field, 2013). The data met all of these requirements.

Multiple regression also requires assumptions to be met around normality, linearity and homoscedasticity. Normality was previously assessed using the pp plots outlined above (in section 3.5.3). The scatter plot of standardised residuals and standardised predicted values were acceptable, suggesting that assumptions around normality, linearity and homoscedasticity were met to an acceptable level. Significant models are discussed below.

***Looking at people's photos on Facebook*.** A significant model emerged which explained 25.5% of the variance in looking at people's photos on Facebook $F(4,60)= 6.48$, $p<0.01$). Facebook Intensity significantly predicted engagement with this activity. Self-concept clarity score was not a significant predictor in the model, and neither were self-esteem score or social comparison tendency score. The raw and standardized regression coefficients of the predictors, the standard errors and confidence intervals of the unstandardised coefficients and significance levels are shown in Table 11.

The low variance explained by the overall model (25.5%) in explaining looking at people's photos on Facebook, leads to consideration that there may be other factors at play besides an individual's level of Facebook intensity. Facebook intensity is seen to correlate with other psychological variables including positively with an individual's level of friendship contingent self-esteem (Pettijohn, LaPiene, Pettijohn & Horting, 2012). According to Pettijohn et al., friendship contingent self-esteem refers to the extent to which friendships with others are perceived as important to the sense of self. This alternative variable may therefore hold the key to additional variance in the extent to which individuals spend time looking at photos of others on Facebook.

Table 11: *Linear model of predictors of 'looking at people's photos on Facebook' detailing the raw (b) and standardized (B) regression coefficients of the predictors, significance levels, the standard errors (SE B) with confidence intervals of the unstandardised coefficients in parentheses.*

Variable	*b*	*SE* ***B***	*B*
Facebook intensity score	0.76 (0.39; 1.12)	0.18	.47***
Self-esteem score	0.05 (-0.01; 0.11)	0.03	.24
Self-concept clarity score	-0.04 (-0.08; 0.00)	0.02	-.30
Social comparison tendency score	0.02 (-0.03; 0.07)	0.02	.10

*p<0.05, **p<0.01, ***p<0.001

Looking through the newsfeed. Facebook Intensity score was a significant predictor in the model which explained 14.8% of the variance $F(4,60) = 3.79$, $p<0.01$). Self-concept clarity score, self-esteem and social comparison tendency scores were not significant predictors in the model. Further regression statistics are detailed in Table 12.

Table 12: *Linear model of predictors of 'looking through the newsfeed' detailing the raw (b) and standardized (B) regression coefficients of the predictors, significance levels, the standard errors (SE B) with confidence intervals of the unstandardised coefficients in parentheses.*

Variable	*b*	*SE* ***B***	*B*
Facebook intensity score	0.68 (0.21; 1.16)	0.24	.35**
Self-esteem score	0.06 (-0.02; 0.14)	0.04	.25
Self-concept clarity score	-0.01 (-0.07; 0.04)	0.03	-.09
Social comparison tendency score	0.03 (-0.03; 0.09)	0.03	.13

*p<0.05, **p<0.01, ***p<0.001

Looking at/reading other people's profiles. Facebook Intensity significantly predicted engagement with this Facebook activity, with the model

accounting for 11.6% of the variance $F(4,60) = 3.10$, $p<0.05$). Self-concept clarity, self-esteem score, and social comparison tendency were not significant predictors, supporting H1, see Table 13.

Table 13: *Linear model of predictors of Looking at people's photos on Facebook detailing the raw (b) and standardized (B) regression coefficients of the predictors, significance levels, the standard errors (SE B) with confidence intervals of the unstandardised coefficients in parentheses.*

Variable	*b*	*SE* ***B***	*B*
Facebook intensity score	0.57 (0.12; 1.02)	0.23	.31*
Self-esteem score	0.04 (-0.03; 0.12)	0.04	.19
Self-concept clarity score	-0.05 (-0.10; 0.00)	0.03	-.32
Social comparison tendency score	0.02 (-0.04; 0.08)	0.03	.08

*$p<0.05$, **$p<0.01$, ***$p<0.001$

Finding out what friends were up to. A significant model emerged explaining 10.8% of the variance in engagement with this activity $F(4,60) = 2.93$, $p<0.05$. Facebook Intensity was a significant predictor in the model, whilst self-concept clarity score, self-esteem score and social comparison tendency were not. Further regression statistics are detailed in Table 14.

Table 14: *Linear model of predictors of 'finding out what friends were up to' detailing the raw (b) and standardized (B) regression coefficients of the predictors, significance levels, the standard errors (SE B) with confidence intervals of the unstandardised coefficients in parentheses.*

Variable	*b*	*SE* ***B***	*B*
Facebook intensity score	0.67 (0.20; 1.14)	0.23	.35**
Self-esteem score	-0.00 (-0.08; 0.08)	0.04	-.00
Self-concept clarity score	-0.03 (-0.08; 0.02)	0.03	-.18
Social comparison tendency score	0.01 (-0.05; 0.08)	0.03	.06

*$p<0.05$, **$p<0.01$, ***$p<0.001$

Positive Mood. A further regression analysis with enter method was conducted to consider if self-evaluation variables and Facebook Intensity would predict positive mood during Facebook use. The total scores for Factor 1 (positive mood) were averaged across the five days and inputted as a dependent variable. Self-concept clarity score, self-esteem score, Facebook Intensity and social comparison tendency score entered as predictors.

Variable checks suggested muliticollinearity was not a concern, assessed by the VIF and tolerance levels (See Appendix 10.1.3.5). Pp plots suggested normality could be broadly assumed. The scatterplot of standardised residuals and standardised predicted values whilst generally acceptable suggested a small number of outliers may exist. To ascertain the extent of the problem Cooks distances were checked. Cooks distance assesses if any unusual cases have undue influence on the model, with suggestion that values greater than 1 are problematic (Field, 2013). None of the values exceeded this level and so the regression analysis was conducted.

A significant model emerged which explained 36.6% of the variance in predicting positive mood during Facebook use $F(4,60) = 10.25$, $p<0.01$. Self-esteem was the only significant predictor in the model, and as such, social comparison tendency, self-concept clarity and Facebook Intensity were not. Therefore Hypothesis 6 which predicted that those with high self-esteem would report greater positive mood during Facebook use than those with low self-esteem was supported. However there were no findings relating to social comparison tendency or self-concept clarity and mood during Facebook use, therefore Hypotheses 7 and 8 were not supported. Further regression statistics

of the significant model are detailed in Table 15, whilst selected SPSS output for all of these regressions are in Appendix 10.1.3

Table 15: *Linear model of predictors of positive mood during Facebook use detailing the raw (b) and standardized (B) regression coefficients of the predictors, significance levels, the standard errors (SE B) with confidence intervals of the unstandardised coefficients in parentheses.*

Variable	*b*	*SE* ***B***	*B*
Facebook intensity score	-0.01 (-0.30;0.28)	0.15	-.01
Self-esteem score	0.08 (0.03;0.12)	0.02	.44**
Self-concept clarity score	0.03 (-0.00;0.06)	0.02	.27
Social comparison tendency score	0.01 (-0.03;0.05)	0.02	.07

*p<0.05, **p<0.01, ***p<0.001

3.6 Discussion

3.6.1 Introduction

This study identified a series of correlational relationships between self evaluation variables, ascertained the predictive value of Facebook intensity in

specific Facebook activities, and suggested that self-esteem may predict mood during site use, via use of a daily Facebook diary. It warrants consideration however that not all Facebook activities were entered into analysis. Some Facebook activities represented a non normal distribution and infrequent use (e.g. posting status updates, editing pictures). It is important to consider if the absence of a normal distribution for these variables may have in part been due to the sample size. However, after viewing histograms and subsequent removal of outliers and a rerun of the pp plots (see Appendix 10.1.4 and 10.1.5 for output;) it was suggested that this did not improve the normality of the distribution, with these activities still representing Facebook activities which saw infrequent engagement amongst the participants.

It is acknowledged however that whilst these activities were not commonly engaged in within the 5 day timeframe, this does not necessarily suggest that these pursuits are not engaged with at all or are not an important aspect of Facebook behaviour. Upon reflection it may have been appropriate to consider a mixture of self reports outlining both what individuals had engaged with on the site in addition to behaviours that they 'may' choose to spend time engaging in on the site. Pempek et al., (2009) in their diary style study of Facebook use included a question on how typical the reported Facebook behaviours were for the participants, and this is an aspect which may have proved a useful addition to the current study. Despite this, examination of the Facebook activities not included in the analyses identifies that these activities largely represented self presentational attempts and active engagement with the site (e.g. posting status updates, editing pictures, looking up old contacts to

friend) whilst those that were entered into analysis primarily represented observational behaviour (e.g. looking at people's photos, reading others profiles, looking at the newsfeed). As such this toolkit of features approach to the examination of Facebook activities enables identification of the fact that not all Facebook activities are frequently engaged with even over several days.

Researchers have noted that Facebook functions can be divided into self presentation via the Facebook profile and interaction between friends in the network (Carpenter & Spottswood, 2013). However, it would also appear that they can be divided into observational behaviour or the passive consumption of content as considered by Burke, Marlow and Lento (2010).

3.6.2 Facebook intensity and Facebook activities

Multiple regression analyses revealed that Facebook Intensity predicted engagement with numerous Facebook activities (looking at people's photos, looking through the newsfeed, looking at/reading other people's profiles and finding out what friends were up to) supporting H1. These regression analyses suggested that Facebook Intensity predicted engagement with several of these observational Facebook activities (looking at people's photos; looking through the newsfeed; looking at/reading other people's profiles; finding out what friends were up to). As such it would appear that these particular observational Facebook behaviours are most employed by those with high levels of Facebook Intensity. The present research then may suggest that those people who have a high level of Facebook intensity spend most of their time on Facebook information seeking, consistent with research by Antheunis, Valkenburg and

Peter (2010) who suggest that information seeking is the most important function.

As such individuals with a high level of Facebook intensity may spend significant portions of their time on Facebook engaging in specific Facebook activities because these activities meet a certain need. Indeed research has considered the types of motivations Facebook use may act to fulfil including based on pre-existing research into human needs. Baumeister and Leary (1995) for example suggested that one of the most overarching needs of humans is the need to form and continue fulfilling and positive interpersonal relationships with others, with research by Nadkarni and Hofmann, (2012) echoing this sentiment, suggesting that Facebook use is motivated by the need to belong, as well as the need to present the self to others. This notion that engaging with the Facebook platform may serve needs and motivations relates to the idea that individuals will prefer some media types and specific applications within such media over others because these types of media meet their needs (Uses and Gratifications Theory; Katz, Blumler & Gurevitch, 1974). Recent research has considered the uses and gratifications framework in the context of Facebook and suggested that Facebook is sometimes perceived as a form of surveillance (Orchard & Fullwood, 2010); consistent with the idea that individuals with a high level of Facebook intensity spend time information seeking on the site.

3.6.3 Correlational findings

Correlations between self evaluation variables were largely in support of previous research. Self-esteem and self-concept clarity held a positive

correlation, in keeping with findings of Campbell, (1990). Those with high self-esteem tend to have highly favourable self views (Baumeister et al., 2003) but high self-esteem is also associated with various cognitive biases, permitting an overly positive evaluation of self attributes (Brown, 1986).This may sound as though self-esteem is associated with self knowledge, but also with an inaccuracy of self knowledge. This makes sense when one considers the description of self-concept clarity. Self-concept clarity considers only how clearly defined and stable self views are, not their accuracy, (Campbell et al., 1996) and as such those with high self-esteem may have clearly defined self views as well as a series of biases towards self positivity (Brown, 1986).

It is suggested that distortions of self views in this way do not occur in those with low self-esteem (Brown, 1986) or at least these individuals are less self serving in their self appraisals (Campbell, 1996). It is suggested that this may be because those with low self-esteem have less certainty around their self views (Campbell, 1990). This is in keeping with the correlational findings of the current study which found that those with low self-esteem conducted more social comparisons than high scorers. Also consistent with previous research a negative correlation between self-concept clarity and social comparison tendency was observed. This may reflect the lack of certainty around self views associated with low self-concept clarity (Campbell et al., 1996) and be reconciled by the traditional notion of social comparison theory that social comparison increases in the event of uncertainty around self views (Festinger, 1954).

It was also revealed that a positive correlation was observed amongst social comparison tendency and Facebook intensity. This is consistent with the suggestion that Facebook is noted to be an ideal arena to find out what others are doing (Haferkamp & Kramer, 2011) and so may represent a good way to find others to use for social comparison purposes (Fox & Moreland, 2015). Previous research has considered the differential motivations for upward and downward comparisons (Taylor, Wayment & Carrillo, 1995). However, because Facebook enables individuals to display idealised and overly positive information about their lives (cf Manago, 2014), social comparisons conducted on Facebook are more likely to be upward in direction, as suggested by Lee, (2014) and Fox and Moreland, (2015). Therefore, for people who conduct frequent social comparison on Facebook the motivation may reflect a self-improvement motive (associated with upward comparison; Wood & Taylor, 1991) rather than self- enhancement (associated with downward social comparison; Wills, 1981). This may suggest that those with a high tendency to social comparison have a high level of Facebook Intensity because of its ability to provide upward comparison information, however this is tentative as the direction of comparisons was not assessed in this study and findings were correlational in nature.

3.6.4 Lack of support for hypotheses

Whilst the first hypothesis found support in the current study, Hypotheses 2-5 were not supported statistically. Analyses did not support the predictions that those with high tendency to compare to others would report spending more time viewing the Facebook newsfeed and viewing the profiles of others

(Hypothesis 2). Those with low self-concept clarity did not report spending more time viewing the Facebook newsfeed and viewing the profiles of others (therefore not supporting Hypothesis 3). Those with high self-esteem were not more likely to report they spent time commenting or liking content on Facebook than those with low self-esteem (Hypothesis 4) and those with low self-esteem were not more likely to report spending time viewing the profiles of others (Hypothesis 5). This may suggest that individual differences in the self evaluation variables measured (self-esteem, self-concept clarity and tendency to social comparison;) do not manifest themselves as differential behaviours on Facebook, however the mood findings suggest that self-esteem at least, may be influential in mood experienced during site use.

3.6.5 Mood during site use and self-esteem

A principal components analysis was conducted on the semantic differential mood during site use items. This analysis suggested a single factor solution, which upon examination was interpreted as a positive mood factor during site use. This was used to determine which of these mood items to retain as a single measure and to use as a dependent variable in regression analysis. The subsequent regression analysis suggested that more positive emotions were reported during site use by those with high self-esteem, supporting Hypothesis 6. Hypothesis 7 which suggested that those with a high level of social comparison tendency and low levels of self-concept clarity (H8) would experience a greater degree of negative affect during use than their higher scoring counterparts was not supported.

The self-esteem findings may be understood by looking to The Self Verification Hypothesis (Swann 1983, 1990). There is suggestion that those with low self-esteem seek to verify their self views, even if, as may be the case in those with low self-esteem, these self views are negative (Jones, 1973). Those with high self-esteem are also interested in verifying their self beliefs, (Swann, Chang-Schneider & Angulo, 2007). However, high self-esteem, as previously discussed, is associated with a series of cognitive biases which enable individuals high in this trait to interpret information in a way which confirms their positive self views (Brown 1986). This may help to explain the differential emotional affect reported by high and low self-esteem individuals when they reflect on the time they spent on Facebook.

3.6.6 Limitations and strengths

It should be noted however, that research suggests that high self-esteem and happiness are highly correlated variables (Baumesiter et al., 2003). The current research did not involve a pre-assessment of participants' mood prior to spending time on Facebook, only asking for reflection of emotions during time spent on the site. Whilst this study held the notable advantage of obtaining data over a series of days, the absence of a comparison of mood before and during site engagement means it is possible that those with high self-esteem and low self-esteem differed in affect prior to spending time on the site and this reflects a limitation of the current work.

Further, despite attempts made to make best use of available data, via comparative analysis after data cleaning (e.g. running without outliers;) the low

sample size remains an issue. This occurred due to changes taking place on the Facebook platform preventing further data collection, as well as issues around a low response rate. Low numbers of Facebook diaries were returned, and this may have been improved by follow up requests (Edwards et al., 2002). However in the current study participation was anonymous thus preventing follow up contact. Whilst this lack of follow up contact may have compounded the low return of diaries, it is also possible that this anonymity may have prompted participation with the study.

The study involved considerable time commitment from participants, requiring them to complete diary over a number of days, which may have impacted response rates. However, this approach is in contrast to previous research which does not typically assess over several days, thus providing more detailed user information. Further, the research reviewed which informed this first study tended to group Facebook activities together, often into a single measure of feature use (e.g. Lee 2014; Vogel, Rose, Roberts & Eckles, 2014) whilst the present study considered Facebook feature use in a more comprehensive manner. The current study also did not ask individuals to reflect on previous Facebook activity in general, as there is suggestion that this can provide inaccurate estimates (Sagioglou & Greitemeyer, 2014). This research has built on previous research findings (e.g. Pempek et al., 2009) and extended them to consider self-evaluation variables and their predictive value in considering Facebook behaviour and affect during site use.

The present research illustrated the value of conceptualising Facebook as a toolkit of features, (Smock et al., 2011) acknowledging that Facebook use

should not be itemised as a single variable, that there are a multitude of activities for individuals to engage in, and further that Facebook intensity predicts engagement with several of these activities. The use of the toolkit of features approach served to emphasise that not all Facebook activities are engaged with on a regular basis, and that some particular types of Facebook activities, such as the observation of content, occur more frequently than other forms of engagement such as self presentational and active engagement with the site. The current research then assists in the wider consideration of Facebook behaviour. Whilst there is focus in the wider media to consider Facebook as inherently bad (Mullins, 2014), this research helps to consider which aspects of site use are problematic, why this may be, and for whom this is the case.

3.6.7 The next study

Perhaps surprisingly, the present study also found a lack of social comparison findings. The limited research into this area suggests it is likely that individuals are exposed to social comparison information about others when spending time on Facebook (e.g. Fox & Moreland, 2015, Chou & Edge, 2012) and therefore this warrants both further and more detailed study. Whilst the present study did contribute to the evidence that self-esteem may be relevant when considering the affective response to time spent on Facebook, (e.g. Haferkamp & Kramer, 2011; Tazghini & Siedlecki, 2013) the next study will employ a pre-assessment and post-assessment of mood. Further there exists research evidence to suggest that state self-esteem (short term changes in self-esteem; Heatherton & Polivy, 1991) may also be of interest when considering Facebook use,

although this has received limited research attention (e.g. Greitemeyer, 2016; Vogel et al., 2015) and this will therefore be examined in the next study.

Chapter 4: Phase two: 'Self-evaluation factors and their influence on mood after Facebook use'

4. 1 Introduction

The last study demonstrated that Facebook intensity positively predicted reported engagement with several Facebook activities, highlighting the idea of Facebook as a toolkit of features (Smock, 2011). For example, individuals identified that they spent time looking through the newsfeed and looking at/reading other people's profiles and that this was predicted by the extent to which they felt connected to Facebook (in a positive direction). Whilst self-evaluation variables did not predict engagement with any of the Facebook activities measured in the study, regression analyses suggested that self-esteem positively predicted positive mood during Facebook use. In other words, those who had higher self-esteem experienced a more profound positive mood shift during time spent using Facebook.

However, a limitation with this study was the absence of a before and after measure of mood. Because this measure was not taken, it was possible that those with low and high self-esteem differed in their mood prior to spending time on Facebook and therefore any differences were a product of pre-existing mood state and not a consequence of using the site. The current study aims to address this weakness by including a pre and post test measure of mood, to see if mood change occurs as a result of participating in a series of social media engagement tasks which broadly represent the main activities that Facebook users engage with. Because of the marked difference in mood between those in high and low in self-esteem after engagement with Facebook presented in study 1, this study aims to develop further this focus on self-esteem, and will

consider self-concept clarity in more depth in subsequent studies. At this stage therefore this study will move forward considering self-esteem and tendency to social comparison and begin further considerations of how Facebook may impact individuals after use.

However, findings from the previous study (study 1) in this thesis suggest that the poor do not always get richer when interacting online, or at the very least they do not experience positive mood to the same extent as those with higher levels of self-esteem when spending time on Facebook. It is important then to continue this consideration of why those high in self-esteem seem to experience positive affect whilst those with low self-esteem do not experience this to the same degree.

Positive and negative outcomes associated with use of Facebook may relate to the type of engagement taking place within the site. Facebook can be regarded as a 'toolkit of features' (cf Smock et al., 2011) and it may be that specific Facebook activities have differential mood impacts. For example, Toma and Hancock's (2013) self affirmation studies revealed that Facebook use can act to restore feelings of self worth and integrity. Indeed, after a threat to the ego was experienced, individuals actively sought out their Facebook profile over a series of other Internet activities available to them. Similarly research by Gonzales and Hancock (2011) observed that profile editing on Facebook can lead to individuals holding a higher level of self-esteem than those conducting other activities (such as looking at their reflection in a mirror), whilst Gentile et al., (2012) reported that those undertaking a profile editing on Facebook

experienced higher state self-esteem after this task than the control group; although it is noted that no before and after comparison was conducted.

As such it may be the case that there is potential for differential impact on mood when engaging on Facebook activities dependent upon the type of Facebook activity undertaken. Whilst the above considered engagement with the Facebook profile, other research including the studies by Haferhamp and Kramer (2011) demonstrated that it may be the exposure to upward comparisons on social networking sites which can lead to adverse mood effects from Facebook engagement. Further, Vogel et al., (2015) study 2 suggested that those who viewed an acquaintance's Facebook profile and compared the self frequently to others reported lower state self-esteem after this activity than those who compared less often. And, those who edited their Facebook profile had a higher level of positive affect than those who viewed the acquaintance profile, with the most marked negative affect amongst those who compared frequently and viewed an acquaintance's profile. This is supported by the findings of Lee (2014) who found those who compared frequently to others or had low self-esteem were most likely to recall conducting comparisons on Facebook as a negative emotional experience.

However, self-esteem has not always been seen to be impacted by conducting upward comparisons on Facebook. Greitemeyer (2016) assessed state self-esteem after upward and downward comparison on a mock Facebook profile and suggested no effect was observed for self-esteem. However, since the state self-esteem measured was summed rather than using its consistent

performance, appearance and social subsets, findings could have been occluded.

Reviewing these studies suggests that a more comprehensive consideration of how different Facebook activities may impact individuals differently is required, in a way which permits direct comparison of the impact on the individual, such as before and after mood comparisons. The impact of individual differences in tendency to social comparison appears to be a predictor of impact of Facebook activities on mood, but because this has only been considered in a limited way (such as how participants think they would feel, Lee, 2014) this requires further examination. State self-esteem though, a variable of several facets, has often been considered as a sum variable (such as Greitemeyer, 2016) and examination of the potential role of its component parts in the impact of different Facebook activities is required.

4.1.1 The current study

The current study aims to take an experimental stance with three conditions. A condition intended to induce social comparison, whereby participants view their Facebook newsfeed; a condition where they can optimally self present, via editing their Facebook profile, and a control condition (where participants engage on Internet pages of their choosing excluding social networking sites). State self-esteem is widely used as a sum in the reviewed literature, but separating it out into its components may provide insightful information into how mood might change as a result of these activities, as might social comparison tendency as considered by Lee (2014) for example.

The impact of spending time engaging with the Facebook activities will be assessed using mood change scores. The studies reviewed to date are limited in how they assess emotional changes in an individual after engaging in Facebook activities. Whilst some have compared users scores on the Rosenberg self-esteem scale (such as Gonzales and Hancock 2011; Gentile et al., 2012) others have used state self-esteem (including Greitemeyer, 2016 and Vogel et al., 2015; study 2). Others have used several measures including the positive and negative affect schedule (including Haferkamp and Kramer 2011) or simply asking participants how they think they would feel after engaging in certain Facebook tasks (such as Lee, 2014).

From reviewing these studies it is clear that if one is to consider how different Facebook activities impact on the mood of individuals a before and after measure is required. Whilst one might consider the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), this scale is based on the idea that affect can be described on two uncorrelated dimensions namely positive affect and negative affect. Further, although this scale is widely used it has met criticism, including the fact that it is debatable whether affect can be adequately measured using two orthogonal dimensions (Matthews, Jones & Chamberlain, 1990). For this reason the decision has been made in the present study to use an alternative measure, namely The University of Wales Institute of Science and Technology (UWIST) Mood Adjective Checklist, (Matthews, Jones & Chamberlain, 1990), hereafter termed the UWIST.

The UWIST scale focuses on three dimensions: Energetic Arousal, Tense Arousal and Hedonic Tone rather than two fundamental dimensions of affect

(positive and negative affect). Energetic Arousal assesses feelings of subjective energy, with 'energetic' and 'alert' for example on the positive end and negative items such as 'sluggish' or 'tired' on the other. Tense Arousal assesses perceptions of subjective tension, with positive items including 'nervous' 'tense', and negative items such as 'relaxed' and 'calm'. Hedonic Tone assesses overall mood pleasantness, with positive items including 'happy' 'cheerful', and negative items such as 'sorry' 'sad'.

A fourth subscale item is General Arousal, which is a measure of overall arousal regardless of mood pleasantness, and is formed of positive and negative items from the Energetic Arousal and Tense Arousal scales (Matthews, Jones & Chamberlain, 1990). A further subscale is Anger Frustration, a unipolar scale, with featuring items such as 'angry' or 'annoyed'. This may be particularly appropriate when considering for example the experience of social comparison. The overall scale is reportedly good at detecting changes in mood, (Matthews, Jones & Chamberlain, 1990) which will be useful for a comparative measure of before and after intervention.

This measure is chosen since it measures beyond the two orthogonal dimensions of the PANAS, permitting a more accurate indicator of an individual's mood state (Martino, 2008). Whilst this measure of mood may not be as widely used as the PANAS, the UWIST has been used across research with reliable results. For example, Martino, (2008) conducted a series of studies assessing fluctuations in mood in response to cognitively demanding situations, simple interventions and the relationship with biological rhythms (e.g. circadian cycles). Similarly, Martino and Morris (2003) applied the UWIST to identify

mood states after ingestion of glucose enriched beverages, and observed a calmer energetic mood state occurring after such drinks. Finally, Morris (2008) examined the effects of chocolate on participants' mood using the UWIST, and provided further evidence to support the ecological validity of such a scale.

Within the current study therefore changes in participants' mood as a result of their time spent on these activities will be assessed to attempt to understand how mood may change as a result of a specific Facebook behaviour, in contrast to previous research. Moreover, Facebook activity can be assessed in interaction with self-esteem and social comparison tendency to test their impact on mood. Further, individuals will engage with actual Facebook friends rather than mock ups to increase ecological validity, and will not be asked to reflect on their previous or future Facebook experiences, as individuals can be inaccurate when considering their affective responses to spending time on Facebook (Sagioglou and Greitemeyer, 2014).

Based on the idea that many Facebook social comparisons will be upward comparisons (Lee, 2014; Fox and Moreland, 2015) it would be anticipated that participants will experience a negative mood shift in the social comparison condition (newsfeed). However, because people with high trait self-esteem may distort information that they see in their social worlds (Taylor and Brown, 1988) a mood shift of this type might not be inevitable. Further, because research suggests that social comparison tendency may influence feelings after social comparison it is therefore hypothesised that after exposure to the social comparison condition (viewing the Facebook newsfeed), those with a high

tendency to social comparison will experience a negative mood shift (Hypothesis 1).

Additionally, since researchers have previously used a global measure of state self-esteem (e.g. by averaging of items) (such as Greitemeyer, 2016) and because mood before and after intervention is not typically assessed and compared in these types of studies (including Vogel et al., 2015; Greitemeyer, 2016) each type of self-esteem measured (performance, appearance and social) will be assessed individually. Further, because individuals vary in the extent different self aspects are contingent to their self worth (Crocker & Wolfe, 2001) it is anticipated that the different measures of self-esteem will reveal differences within the experimental conditions.

Specifically it is hypothesised that those with low levels of appearance self-esteem will experience a decrease in positive mood after profile editing due to their concerns about self image, since it is anticipated that this activity would bring self image to the fore. In contrast it is expected that those high in appearance self-esteem will experience an increase in positive mood after this activity (Hypothesis 2). Hypothesis 3 predicts that individuals with low levels of performance self-esteem will report a decrease in positive mood, whilst high scorers will report an increase in positive mood after profile editing, due to the differences in their beliefs about their performance and ability to portray this. Hypothesis 4 predicts that after viewing the Facebook newsfeed, those high in social self-esteem will report an increase in positive mood after this activity, whilst low scorers will report a decrease due to their concerns around their social self. The task of randomly surfing the Internet (group c) represents the

control condition and as such no effects are anticipated within low and high scorers in this group.

4.2 Methods.

4.2.1 Participants

Power analysis for independent samples t test was conducted in G*Power to determine a sufficient sample size using an alpha of 0.05, a power of 0.80, and a medium effect size (0.5). Based on the aforementioned assumptions, the desired sample size was 128 participants, or 64 in each group. Power analysis was also conducted for a one way ANOVA with alpha of 0.05, power of 0.80 and medium effect size (0.25) yielding a sample size of 159. During the course of data collection Facebook introduced changes to the platform. These included the ability for users to choose which pages and friends appear first within their Facebook newsfeed, permitting users an enhanced ability to control what content they see on their Facebook newsfeed. There was potential therefore for some participants to encounter a different Facebook experience due to the platform changes than those who had participated in the study prior to these changes. Based on this data collection ceased before the desired participant sample size was obtained and results are interpreted with caution.

101 participants aged between 18 and 58 years (mean: 25.96; SD: 8.05), participated in the study, 68 of whom were female, the remainder male. The participants were gained primarily from the Psychology Students' Participant pool, and offered Participant Pool Credit for participation. Students from other subject areas within the University were approached to increase participation as

well as other Facebook users via snowball sampling. It is duly noted that psychology students form a large part of this participant group. Whilst this is not uncommon within psychology research (Brewer 2001a; Brewer 2001b,) there are various concerns associated with this approach. For example, students may not hold a fully formed self-concept, and are unlikely to accurately represent the population at large (Sears, 1986). This is acknowledged as a limitation within the data collection methodology of this study.

Participants were only eligible to participate if they held a current Facebook account (which they had used within the last six months). 8 of these participants did not fully complete all aspects of the experimental study and so were excluded from analysis.

4.2.2 Materials:

4.2.2.1 Demographic information

Demographic information in the form of age and gender was provided by participants who then completed a series of self-evaluation questionnaires.

4.2.2.2 The UWIST Mood Adjective Checklist (Matthews, Jones & Chamberlain 1990). See Appendix 10.2.1.1

The UWIST Mood Adjective Checklist (Matthews et al., 1990) was used to assess participants' current mood both before and after taking part in the online activity, it obtained a Cronbach Alpha of .73 for the current study, which is reportedly reliable (Nunnally, 1978). The UWIST is formed of 29 adjectives

describing types of mood, whereby respondents indicate the response that best matches their current mood on a 4 point likert scale of 'definitely (1)' to 'definitely not (4)'. 5 subscales exist within the measure: Energetic Arousal (assessing feelings of subjective energy) Tense Arousal (assessing subjective tension), Hedonic Tone (assessing overall mood pleasantness), Anger Frustration (assessing feelings of annoyance and irritation), and General Arousal (assessing overall arousal independent of mood pleasantness).

The scale has been used widely and has been demonstrated to show satisfactory levels of both predictive and discriminant validity (Haworth, Young & Thornton, 2009). However there has been some disagreement about the reliability of General Arousal subscale. This subscale only has a partial factorial basis: it was formed from the original three factor matrix before rotation, (that is the un-rotated factors of Energetic Arousal, Tense Arousal and Hedonic Tone) (Matthews, Jones & Chamberlain, 1990). Although the full range of the scale has been used in studies where a variety of mood types are of particular research interest (e.g. Morris et al., 1998; Morris, 2002) on this occasion a decision was made to enlist all the mood scales with the exception of General Arousal because this aspect of the scale relates to overall arousal which is independent of mood, and the research is interested in a range of mood descriptions.

4.2.2.3 The Current Thoughts Scale (Heatherton & Polivy, 1991). See Appendix 10.2.1.2

Participants also completed The Current Thoughts Scale (Heatherton & Polivy, 1991) to assess state self-esteem: feelings of self worth at the current moment in time, via a scale reportedly sensitive to conditions where state self-esteem may be temporarily altered (Heatherton & Polivy, 1991). Participants answered the 20 self report questions from this scale, indicating the extent to which each statement was true for them at the present time from 1 – not at all, to 5 – extremely. Example items included 'I feel that I am having trouble understanding things that I read' and 'I feel that others respect and admire me'. Within this scale three state self-esteem subscales were obtained: Performance (e.g. 'I feel confident that I understand things'); Appearance (e.g. 'I am pleased with my appearance right now'), and Social self-esteem (e.g. 'I am worried about what other people think of me.'). Cronbach's alphas for the performance subscale (0.84), social subscale (0.86) and appearance subscale (0.82) are acceptable (Nunnally, 1978).

4.2.2.4 The Iowa-Netherlands Comparison Orientation Scale (INCOM)

Please refer to section 3.3.3 for details of this scale. Within the current study a Cronbach's Alpha of .76 is reported which is acceptable for consistent internal reliability (Nunnally, 1978).

4.2.3 Procedure:

Information sheets outlining study details and participant requirements were given to participants. Informed consent was obtained and participants then

provided demographic information and completed the UWIST Mood Adjective Checklist (Matthews, 1990), Current Thoughts Scale (Heatherton & Polivy, 1991) and Iowa-Netherlands Comparison Orientation Scale (INCOM) (Gibbons and Buunk, 1999). It is an acknowledged oversight that counterbalancing of the order of the questionnaires did not take place in this study, and that it is good practice to counterbalance in this way to attempt to mitigate against order effects such as boredom or fatigue (Gray, Grove & Burns, 2016).

Upon completion of the questionnaires participants were randomly allocated via the drawing of lots; to Condition A, B or C which involved completing an online task for 10 minutes. The choice of web browser was limited to those available on the desktop of the labspace, namely Internet Explorer and Google Crome, with observation of participants suggesting a preference for Google Crome. Participants in Condition A received written instructions to open a web browser, log in to their Facebook profile , and, once logged in to Facebook using their personal Facebook details, participants were asked to view their newsfeed and spend ten minutes observing this content. Participants in Condition B received instructions to open a web browser, log in to Facebook and spend 10 minutes editing their Facebook profile. Both groups were instructed not to visit any other websites during this time. Participants in condition C were instructed to randomly surf the Net on any site of their choosing, but requested not to use any social networking websites. To ensure adherence to the task unobtrusive monitoring of all participants was undertaken by the experimenter, although in practice all participants remained on task without prompting.

After ten minutes engaging with their allocated task the Internet task was ended and participants were provided with a second copy of The UWIST Mood Adjective Checklist (Matthews, 1990) to complete. Following completion of the second UWIST, participants were debriefed, and given the opportunity to ask questions. Participants were then thanked and dismissed.

Self-esteem scores were computed as per author guidelines forming three subsets of self-esteem: Performance, Appearance and Social self-esteem. A social comparison tendency score was computed as per author guidelines. Mood change scores for each of the mood subscales (Tense Arousal, Hedonic Tone and Anger-Frustration) were calculated by taking the second mood score and subtracting the first mood score (for example the second Anger Frustration score minus first Anger-Frustration mood score).

4.3 Results:

4.3.1 Analysis of Variance (ANOVA) analysis to compare mood scores before completion of Internet tasks

Since the study aimed to examine differences within each of the experimental conditions, those who viewed the newsfeed (Group A; n33); those who spent time editing their profile (Group B; n32;) and those who spent time randomly surfing the Internet, (Group C; n28), it was important to establish if baseline scores for Tense Arousal, Hedonic Tone and Anger Frustration differed across the groups prior to the experimental manipulation. To test this a one way ANOVA was conducted, with group (A, B or C) as the independent variable and each of the before mood scores as dependent variables. Tense Arousal scores

did not differ before intervention F (2,90)=0.59, p = >0.05 and neither did Hedonic Tone scores F (2,90) =0.27, p = >0.05. Finally, Anger Frustration scores were not significantly different in any of the groups prior to intervention F (2,90)=2.22, p =>0.05. As such none of the groups differed significantly in any of the mood scores before taking part in the online activities.

4.3.2 T tests assessing difference in degree of mood change after Internet tasks

Next analysis moved forward to ascertain mood change scores as a result of intervention, e.g. if Hedonic Tone increased following engagement with the Internet tasks of a specific group for example. To begin this analysis the mood change scores for Tense Arousal, Hedonic Tone Energetic Arousal and Anger-Frustration were checked for normality of the distribution. PP plots suggested a normal distribution for each variable. To establish if mood change scores for the mood facets (Tense Arousal, Anger Frustration and Hedonic Tone change scores) differed significantly between those low and high in self-evaluation variables (social comparison tendency, Appearance self-esteem, Performance self-esteem and Social self-esteem) in each of the experimental conditions (Group A - who spent time looking at the newsfeed, Group B - who spent time editing their profile; and Group C - who spent time randomly surfing the Internet) a series of T tests were employed enabling a test of difference.

Scores for social comparison tendency, Performance self-esteem, Appearance self-esteem and Social self-esteem were computed into median split scores (above or below the median). The independent or grouping variable for these

tests was therefore social comparison, Appearance self-esteem, Performance self-esteem and Social self-esteem median split scores in each test respectively, with the dependent variables being the Hedonic Tone change scores, Anger Frustration change scores, Energetic Arousal change scores and Tense Arousal change scores. The output for each test was split by group – A, B and C. SPSS output for these analyses can be found in Appendix 10.2.2

Also included throughout these analyses is a measure of effect size. Such measures are used to provide additional information as probability values do not indicate how strongly variables are related or associated, therefore such additional statistics provide information regarding the strength of this association (the size of the effect) (Pallant, 2016). Whist there are several measures of effect size, Cohen's *d* is employed here as it is both appropriate for examining group differences and assesses differences between groups in standard deviation units, thus enabling a meaningful comparison with other *d* scores (Corcoran & Dattalo, 2006; Vogt, Gardner, Haeffele & Vogt, 2014). As such, unlike other estimates of effect size, (Field, 2015) these scores permit comparisons amongst other studies which have also used *d* scores. Cohen (1988) provides guidance on whether effects are small (0.2) medium (0.5) or large (0.8) and this will be reported additionally throughout the analyses.

4.3.3 Social comparison tendency effects

Results suggested that those with high tendency to social comparison experienced a decrease in Energetic Arousal (*M*: -1.47; *SE*: 1.26) whilst those with a low tendency to social comparison experienced an increase in Energetic

Arousal (*M*: 1.50; *SE:* 0.72) after viewing the Facebook newsfeed. This mean difference (2.97; 95% CI: 0.13; 5.81), was significant at the 0.05 level, *t*(31) = 2.13, *p*= <0.05, with a medium effect size: *d* = 0.74 (Cohen, 1988). As anticipated, no effects were observed after randomly surfing the net (these non significant effects are displayed in Table 6).

Table 6*: T- test statistics for non-significant effects amongst those low and high in social comparison tendency (SCT). Standard errors (SE) and 95% confidence intervals are displayed in parentheses.*

Group	Variable	M Low SCT (SE)	M High SCT (SE)	M difference (CI 95%)	*t*	P value	Effect size D
C	TA	-0.75 (0.49)	0.58 (0.70)	-1.33 (-3.03; 0.37)	-1.61	*0.12*	-0.61
	HT	1.06 (0.61)	1.33 (0.85)	-0.27 (-2.36; 1.81)	-0.27	*0.79*	-0.10
	AF	-1.00 (0.48)	-0.17 (0.79)	-0.83 (-2.64; 0.97)	-0.95	0.35	-0.36
	EA	0.38 (0.56)	-0.08 (1.02)	0.46 (-1.79; 2.70)	0.42	*0.68*	0.16

Group C: Randomly surfed the Internet. TA: Tense Arousal mood change scores. HT Hedonic Tone mood change scores. AF: Anger Frustration mood change scores. EA: Energetic Arousal mood change scores. *M:* Mean.

4.3.4 Appearance self-esteem effects

Those with low levels of Appearance self-esteem reported a decrease in Hedonic Tone (*M*: -1.20; *SE:* 1.11) after editing the Facebook profile, whilst high scorers reported an increase in Hedonic Tone after this activity. (*M*: 2.54; *SE*: 0.74). This mean difference (-3.75; 95% CI: -6.76; -0.73); represented a significant effect $t(30) = -2.54$, $p = <0.05$, with a large effect size; $d = -1.00$. Low scorers also reported a decrease in Energetic Arousal after editing the Facebook profile (*M*: -0.79; *SE*: 0.78) whilst high scorers reported an increase (*M*: 1.62; *SE:* 0.77). This mean difference (-2.40; 95% CI -4.74; -0.07), represented a significant medium effect $t(30) = -2.11$ $p = <0.05$, $d = 0.78$ (Cohen, 1988). Further, as anticipated, no effects were found for the control group of randomly surfing the net. These non significant effects are detailed in Table 7.

Table 8: *T- test statistics for non significant effects amongst those Low and high in Appearance self-esteem (ASE). Standard errors (SE) and 95% confidence intervals are displayed in parentheses.*

Group	Variable	M Low ASE (SE)	M High ASE (SE)	M Difference (CI 95%)	*t*	p-value	Effect size D
C	TA	-0.30 (0.65)	-0.11 (0.56)	-0.19 (-1.97; 1.60)	-0.22	*0.83*	-0.09
	HT	1.90 (0.97)	0.78 (0.55)	1.12 (-0.99; 3.23)	1.09	*0.28*	0.42
	AF	-1.00 (0.58)	-0.44 (0.60)	-0.56 (-2.44; 1.33)	-0.61	*0.55*	-0.25
	EA	0.90 (0.55)	-0.22 (0.77)	1.12 (-1.16; 3.40)	1.01	*0.32*	0.45

C: Randomly surfed the Internet. TA: Tense Arousal mood change scores. HT Hedonic Tone mood change scores.AF: Anger Frustration mood change scores. EA: Energetic Arousal mood change scores. M: Mean.

4.3.5 Performance self-esteem effects.

Those with low levels of Performance self-esteem experienced an increase in Tense Arousal (*M*: 0.62; *SE* 0.70), whilst those with high levels of Performance self-esteem experienced a decrease in Tense Arousal (*M:*-2.36; *SE:* 1.00) after editing the Facebook profile. This mean difference (2.98; 95% CI: 0.53; 5.44) was significant at the 0.05 level $t(30) = 2.48$; $p = <0.05$, and suggested a large effect size: $d = 0.92$. (Cohen, 1988). As anticipated, no effects were observed in the control condition of randomly surfing the net (see Table 7).

Table 7: **T- test statistics for non-significant effects amongst those Low and high in Performance self-esteem (PSE). Standard errors (SE) and 95% confidence intervals are displayed in parentheses.**

Group	Variable	M low PSE (SE)	M High PSE (SE)	M difference (CI 95%)	*t*	p-value	Effect size D
C	TA	-0.46 (0.74)	0.07 (0.47)	-0.53 (-2.28; 1.23)	-0.62	*0.54*	-0.24
	HT	1.23 (0.67)	1.13 (0.74)	0.10 (-1.97; 2.17)	0.10	*0.92*	0.04
	AF	-0.54 (0.70)	-0.73 (0.56)	0.19 (-1.66; 2.05)	0.22	*0.83*	0.08
	EA	-0.08 (0.96)	0.40 (0.58)	-0.48 (-2.70; 1.75)	-0.44	*0.66*	-0.17

C: Randomly surfed the Internet. TA: Tense Arousal mood change scores. HT Hedonic Tone mood change scores.AF: Anger Frustration mood change scores. EA: Energetic Arousal mood change scores. M: Mean

4.3.6 Social self-esteem effects.

Low and high Social self-esteem scorers did not differ in any of the mood change facets after viewing the newsfeed. As expected there were no effects for randomly surfing the net). See Table 9 for a summary of all test statistics.

Table 9: **T- test statistics for non-significant effects amongst those Low and high in Social self-esteem (SSE). Standard errors (SE) and 95% confidence intervals are displayed in parentheses**

Group	Variable	M Low SSE (SE)	M High SSE (SE)	M difference (CI 95%)	*t*	p-value	Effect size D	Post hoc power calculations
A	TA	-0.06 (0.95)	-0.31 (0.73)	0.25 (-2.21; 2.72)	0.21	*0.84*	0.07	0.05
	HT	-1.06 (1.06)	0.56 (1.12)	-1.62 (-4.76; 1.52)	-1.05	0.30	-0.37	0.18
	AF	-0.18 (0.82)	-0.25 (0.95)	0.07 (-2.48; 2.63)	0.06	*0.95*	0.02	0.05
	EA	-0.82 (1.20)	1.19 (0.76)	-2.01 (-4.95; 0.93)	-1.40	*0.17*	-0.50	0.29
C	TA	-0.25 (0.85)	-0.13 (0.40)	-0.13 (-2.12; 1.87)	-0.13	*0.90*	-0.06	0.05
	HT	2.00 (0.95)	0.56 (0.46)	1.44 (-0.80; 3.68)	1.36	*0.19*	0.56	0.28
	AF	-0.83 (0.83)	-0.50 (0.46)	-0.33 (-2.17; 1.50)	-0.37	*0.71*	-0.14	0.06
	EA	-0.58 (0.83)	0.75 (0.68)	-1.33 (-3.52; 0.85)	-1.25	*0.22*	-0.48	0.21

A: Viewed the Facebook newsfeed. C: Randomly surfed the Internet. TA: Tense Arousal mood change scores. HT Hedonic Tone mood change scores.AF: Anger Frustration mood change scores. EA: Energetic Arousal mood change scores. M: Mean

4.4 Discussion

4.4.1 Social comparison tendency and viewing the newsfeed.

Results above regarding social comparison tendency suggested tentative support for Hypothesis 1 which proposed that after exposure to the social comparison condition (viewing the Facebook newsfeed), those with a high tendency to social comparison will experience a negative mood shift (Hypothesis 1). Results suggested that who compared themselves to others more frequently reported a decrease in Energetic Arousal (increases in feelings of tiredness and decreases in energy for example) after viewing the Facebook newsfeed. This may suggest that making comparisons is particularly draining for people with a high comparison tendency. Although research exists to suggest that social comparisons are reasonably easily conducted and without much cognitive effort (Gilbert et al., 1995) recent research suggests that conducting social comparisons may actually require allocation of mental resources and thus require an amount of cognitive effort.

Want and Saiphoo (2017) recruited female participants (who reported perceptions of pressure from media to improve their appearance) and assessed mood and appearance self-evaluations (e.g. satisfaction with facial appearance, overall appearance and weight) both before and after viewing images of attractive and thin females. One condition (‘free view’) had to remember a simple number during this task, a second 'cognitively busy' group memorised a more complex number whilst viewing the images, whilst a control group viewed images

which did not contain the attractive and thin females. Those who only needed to remember a simple number experienced an increase in negative mood and decreased levels of appearance satisfaction after this task, however the control group and the participants who had been kept cognitively busy did not experience such mood or appearance self-evaluation changes. It was suggested that conducting social comparisons with media images does indeed involve cognitive effort. Similar findings were reported by Want, Botres, Vahedi and Middleton, (2015) who suggested that if conducting social comparisons involves minimal cognitive effort, an impact on the individual e.g. mood decrease or negative impact on self-evaluations would occur regardless of the cognitive busyness of the individual (if they were conducting an additional task at the time or not).

Within the current study participants with a high tendency to social comparison experience a decrease in Energetic Arousal (feeling drained) therefore future research may wish to consider the influence of cognitive effort involved in processing social comparison information. Within the current study those with a low tendency to social comparison on the other hand who do not conduct social comparisons as frequently were seen to experience a sense of exhilaration (increases in Energetic Arousal) from learning about what their friends are getting up to. As such research may wish to consider if these individuals view the Facebook newsfeed without internalising the information on the site for comparison purposes.

4.4.2 Appearance self-esteem and profile editing

Hypothesis 2 found support in the current data. The reported increase in Hedonic Tone (overall mood pleasantness) and Energetic Arousal (subjective energy) after profile editing amongst those with high levels of Appearance self-esteem offers support for the Social Enhancement or rich-get-richer hypothesis (Valkenburg, Schouten, & Peter, 2005), supporting the notion that those with high levels of competence in offline interactions develop this further online and experience self enhancement (Valkenburg & Peter 2007). This is further examined in the next study: this study will examine the textual methods of self presentation individuals' use on Facebook. If then, for example, individuals low and high in self-esteem differ in the manner of presenting the self, this may then act to inform the interactions they have with others, that is, if self enhancement is experienced.

To return to the current findings, it may be interpreted therefore that those who have positive feelings around their current physical appearance (e.g. 'I am pleased with my appearance right now' 'I feel satisfied with the way my body looks right now') feel able to edit their Facebook profile to present a self image which leads to increased levels of overall mood pleasantness and feelings of subjective energy. This may therefore imply that those with high levels of Appearance self-esteem are especially able to exploit the benefits of the communication medium, affordances such as the reallocation of cognitive resources and selective

self presentation of text and images enabled in part due to the largely asynchronous nature of the platform (Walther, 1996) compared to the lower scorers in this self-esteem facet.

In contrast the findings around low scorers in Appearance self-esteem reported decreased levels of Hedonic Tone and Energetic Arousal after profile editing, therefore not supporting the Social Compensation or Poor-get-richer Hypothesis (Poley & Luo, 2012), which proposes that those individuals who experience difficulty with offline interactions may be able to compensate for this difficulty by exploiting the benefits of online communication (Valkenburg et al., 2005). This may be explained by considering the the anchored nature of Facebook. This site can be regarded as nonymous, as users' online and offline identities are commonly linked (e.g. by using one's real name), and online friends are often known offline as well (Zhao et al., 2008). In keeping with this there is suggestion that within Facebook, online contacts are largely formed of the offline social network (Amichai-Hamburger, Kaplan & Dorpatcheon, 2008). It may therefore be that one can only go so far in terms of flexible self-presentation in an anchored community because there are expectations among pre-existing contacts about how far one can deviate from their 'offline' self. For example Donath and boyd, (2004) and Bartsch and Subrahmanyam, (2015) have noted how within so-called anchored social media sites friends on the site can act to verify or refute an individual's self presentation attempts. Further, researchers have suggested that self presentation attempts on Facebook reflect the actual personality of the individual not an alternative self far removed from the

offline persona (e.g. Back et al., 2010). Therefore the anchored nature of Facebook may mean those with low levels of appearance self-esteem are limited to self presentations via profile editing shackled by the constraints of the actual self, and since those with low levels of appearance self-esteem have less positive views of their appearance this may lead to a mood decrease.

A negative mood shift after profile editing was not limited to those with low levels of Appearance self-esteem, findings of the current study also suggested that Performance self-esteem is relevant when evaluating mood change after editing the Facebook profile, with low and high scorers also differing in the impact this activity had on their mood.

4.4.3 Performance self-esteem and profile editing.

Hypothesis 3 also found support in the findings. A negative mood shift in the form of increased levels of Tense Arousal was reported amongst those with low levels of Performance self-esteem when they had spent time editing their Facebook profile. Again this is in contrast to the Social Compensation or poor-get-richer hypothesis (Poley & Luo, 2012). The characteristics of the low performance self-esteem scorers (e.g. lower levels of confidence in their abilities than higher scorers, feeling rattled by their performance;) may provide insight into how able these low performance self-esteem scorers perceived their ability to complete the task of editing the Facebook profile : If these individuals perceive themselves as less smart and articulate, presenting them with a task

which requires them to do things which will ultimately be judged by others might have a negative impact on their mood.

These findings can also be considered in the context of the results of Toma and Hancock's (2013) studies of self affirmation and Facebook use. Toma and Hancock suggested that engagement with the Facebook profile can act as a self affirming activity (evidenced as non-defensive responding to feedback) and therefore act to restore feelings of self worth. The process of self affirmation can be defined as bringing to mind valued self attributes integral to the self-concept (Steele, 1988). If engagement with the Facebook profile therefore is a self affirming activity, one may have anticipated positive mood shift amongst both those low and high in state self-esteem. The finding that those low in Performance self-esteem experienced a negative mood shift may be reconciled by referring to an important point raised by Toma and Hancock. They noted that for information about the self to be self affirming, it has to be a true and accurate self portrayal. It may be that if these individuals with low Performance self-esteem and do not perceive themselves to have competence in this domain, then presenting a self image which may include these self aspects may be more cognitively demanding for them than for those who feel confident about their performance related abilities, perhaps leading to increases in Tense Arousal.

In contrast therefore high scorers on the Performance self-esteem measure do have a positive self view in this domain, and in keeping with

this, the current findings suggested that high Performance self-esteem scorers reported decreases in tension after profile editing, supporting the Social Enhancement or rich-get-richer hypothesis (Valkenburg, Schouten, & Peter, 2005) and may again suggest that these individuals are more able than lower scorers to exploit the benefits of this communication medium to their advantage compared to lower scorers. It may also once again reflect the nonymous nature of the site, whereby Facebook may act to constrain those with low levels of performance self-esteem by limiting the extent of idealisation of attributes which can take place.

4.4.4 Social self-esteem – lack of significant effects.

It is notable that there were no significant effects observed around individuals' levels of Social self-esteem, unlike Performance and Appearance self-esteem, therefore not supporting Hypothesis 4. As such whilst individuals low and high in Performance and Appearance self-esteem experienced different directions of mood change after engaging in specific Facebook tasks, individuals who had high levels of Social self-esteem did not appear to differ from those with low levels of Social self-esteem in terms of the impact of these Facebook activities on their mood. This may suggest that there is something qualitatively different about Social self-esteem, such that individuals who have high and low levels of Social self-esteem are not differentially impacted in terms of mood change after engagement with Facebook activities. However it should also be noted that the effect sizes as displayed in Table 9 show a majority of very small effect sizes, with a small number of medium

effect sizes. Post hoc power calculations analysis using Gpower conducted on these results (see Table 9) suggest insufficient power to detect an effect, (power of <0.80 reported to denote inadequate power Onwuegbuzie & Leech, 2004) and as such the fact that effects may have existed but not been identified is acknowledged.

Alternatively the lack of findings around social self-esteem could relate to the types of tasks individuals were requested to engage with, these were focused on self presentation (e.g. viewing the Facebook newsfeed and editing the Facebook profile). If this study had included a task where direct interaction with others was required different findings may had been uncovered. Therefore the next study acknowledges different modes of communication within Facebook, specifically examining self presentation on Facebook via status updates.

4.4.5 Summary of findings

The present study would suggest that those who have a high tendency to compare to other people may experience a negative mood shift after spending time viewing the Facebook newsfeed. It is also suggested that individual differences in state self-esteem, namely Appearance and Performance self-esteem are relevant in evaluating mood change after editing the Facebook profile. It appears that those with high levels of Appearance and Performance self-esteem experience a positive mood shift after editing the Facebook profile, therefore research may wish to consider if as well as this mood effect, these individuals are more able to exploit the affordances of this communication platform than lower

scorers in these domains, for example looking at variations in language use on the site. Those with low Appearance self-esteem and low Performance self-esteem experienced a negative mood shift after this task. Appearance self-esteem perhaps surprisingly did not relate to mood change after either of these Facebook activities.

These findings offer support for rich-get-richer hypothesis (Valkenburg, Schouten, & Peter, 2005; Valkenburg & Peter, 2007) and therefore do not support the Poor-get-richer hypothesis (Poley & Luo, 2012). It may be the case that the latter hypothesis has limited merit in understanding Facebook interactions in the domains studied, and this may reflect the anchored reality context. In less anchored contexts (such as online dating) individuals may have more freedom to present the self image that they want to because of the absence of offline friends to refute a self presentation (something which exists within Facebook and other nonymous environments) although the expectation of continued interaction (and potentially face to face contact) may still place some limitations upon individuals' creativity of self expression (Whitty 2007; Ellison, Heino & Gibbs, 2006).

It would be misleading however to suggest that this study offers conclusive evidence that the Poor-get richer hypothesis is not supported, indeed it may be the case that other factors such as personality may have provided alternative evidence. This is supported by Hamburger and Ben-Artzi (2000) who suggest that personality traits govern Internet behaviour, and that introverts in particular can gain benefit from online

interactions in a way which permits them to 'get richer'. Spradlin, Cuttler, Bunce and Carrier (2017) reported that use of Facebook was associated with increases in face-to-face communication with others, an effect which was moderated by levels of extraversion; specifically for those with lower levels of extraversion, that is, those who were more introverted. They suggest it may be that engaging with others via Facebook permits introverted individuals the ability to interact with others in a way that permits the building of trust and rapport to the extent that they become more confident engaging in face-to-face interactions. This study therefore serves to demonstrate how examination of personality traits may permit identification of poor-get-richer effects and in particular if wider study of the ability to 'get richer' (e.g. through development of offline relationships) is undertaken.

4.5 General considerations, future directions and conclusions

The present study offers several unique aspects whist building upon the findings of numerous recent studies. This study took a toolkit of features approach, (Smock et al., 2011) recognising that Facebook is not a homogenous environment and examining the mood impact of certain particular Facebook activities. This research has considered a combination of self-evaluation variables (state self-esteem of various types and social comparison tendency) and has provided a deeper elaboration on the ways in which certain Facebook activities may impact the mood of individuals as a function of these variables. For example research has previously identified that people with a high tendency for

social comparison are more likely to report that they might experience 'negative feelings' (feelings of isolation and perceiving others as having better lives) when reflecting on Facebook activities exposing them to social comparison (viewing the newsfeed or profiles of others) (Lee, 2014). This study has built on this idea suggesting that those with a high level of social comparison tendency experience a mood decrease in the form of depleted Energetic Arousal (decreases in feelings of subjective energy) after viewing the Facebook newsfeed. This study therefore provides a more detailed picture of the ways in which activities on Facebook involving social comparison with others may influence those with a high tendency to social comparison and how this might differ from those who compare less frequently.

The current study also considered the contribution of several specific state self-esteem types contrary to similar previous studies, and has identified that not all Facebook activities seem to impact individuals in the same way (those with high performance and appearance self-esteem received a positive mood shift after profile editing, but not after the newsfeed condition – this aspect of Facebook use may have a lesser emotional impact for these individuals). This was enabled via the comparison of mood before and after intervention, which is not typically considered similar studies enabling examination of what particular ways Facebook can affect individuals in terms of mood shift. Subsequently this study has contributed to the research knowledge around how specific types of state self-esteem may act to influence effects on mood of certain Facebook activities. This study has subsequently provided a

unique insight via identification of some of the circumstances under which the rich may get richer and poor might not (in terms of which activities cause this and why it might be). It is suggested that anchored reality (Zhao et al., 2008) might be hindering some people (those with low state self-esteem of various types) and as such affordances may be better able to be exploited by others (the rich get richer) in the case of some specific Facebook activities.

4.5.1 Limitations

Despite notable areas where the current study advances and builds on previous research, limitations to the current study should be noted. It should be noted that the content and valence of Facebook posts viewed by participants were not seen by the experimenter, so conclusions drawn on content seen (such as the amount of narcissistic content) are speculative. Future research should further develop the ideas considered here by viewing the actual Facebook content of individuals or even controlling which comments in the newsfeed are read by participants.

It is also notable that the second study of this thesis did not build on the limitations of the first as much as would have been expected. This in part relates to these two studies running concurrently, and as such the limitations identified with the first study are not necessarily comprehensively addressed within the second study of the thesis. This research however does point towards the increasing evidence that Facebook interactions may affect mood, and that this impact may not always be a positive one. Similarly, whilst previous research has

suggested the ability to self enhance and that the poor might get richer through engaging with Facebook (Steinfield et al., 2008) in the context of this investigation this does not always appear to be the case.

It would seem then, that in order to understand modern day social life, examination of social networking sites is key (Wilson et al., 2012). Since Facebook remains the most popular social networking site (Statisca, 2016) it is the logical choice to begin studying the social processes associated with the use of online social networking sites. Facebook is becoming increasingly integrated into the everyday life of individuals, for that reason it is important to gain an understanding of both the positive and negative implications of interaction with Facebook on individuals (Wilson et al., 2012). In continuing to research Facebook behaviour and the scope of experiences individuals have with Facebook engagement, users may in turn be increasingly able to identify the costs and benefits associated with use and manage their Facebook experiences in a way which benefits them psychologically (Fox & Moreland, 2015), and further, examining actual Facebook content should be part of this.

In keeping with this, one limitation of the current study is that there was no data gathered around how participants edited their Facebook profile. This is relevant because Facebook provides the opportunity for flexible (Attrill ,2015) if not idealised (cf Back et al., 2010) self presentation in a largely asynchronous format. As such interactions of this type may become hyperpersonal comparative to face to face interaction (Walther, 1996). The asynchronous format and flexible self

presentation may therefore enable individuals to self present in a manner different to their offline self presentational habits. Typically research has focused on visual markers of personality as a function of Facebook use (e.g. Eftekhar et al 2014; Hum et al., 2011) that is if individuals' personalities are detectable via their visual displays on the site. However textual self presentation is also a factor in site use, and one that is less readily researched in the context of self-evaluation variables (such as self-esteem e.g. Forest & Wood, 2012). It would therefore be interesting to see if individuals' self presentational style including textual self presentation on the site differs as a function of these self-evaluation variables of self-esteem, self-concept clarity and social comparison tendency, to see if they can compensate for aspects of their personalities which may make offline interactions with others more challenging. This may also shed further light on some of the findings found in the current study. Therefore the next study will examine the extent to which self-evaluation factors influence self presentational style on Facebook, specifically considering the types of language individuals' use and observing actual Facebook content.

Chapter 5. Phase three: How do self-evaluation factors predict self presentational style on Facebook?

5.1 Introduction

Studies in this thesis so far have raised a number of interesting findings for consideration. The first study, whilst suggesting there were no effects for self-evaluation variables (trait self-esteem, social comparison tendency and self-concept clarity) on the extent to which individuals engaged in certain Facebook activities, observed that positive mood after use was predicted by trait self-esteem. The second study suggested that differential impact on mood after specific Facebook activities was observed amongst those low and high in certain types of state self-esteem. It was suggested that those with high levels of appearance and performance self-esteem reported a positive mood shift after profile editing, whilst the scorers in these variables appeared experienced a negative mood shift. Specifically individuals with high levels of appearance self-esteem experienced increases in Hedonic Tone (overall mood pleasantness) and Energetic Arousal (subjective energy) after editing the Facebook profile, whilst those with high performance self-esteem experienced a decrease in Tense Arousal (feelings of tension) after this task. In contrast amongst those with low levels of appearance and performance self-esteem the opposite effect was reported.

This could suggest that high self-esteem individuals may generally be able to experience more positive outcomes from some Facebook activities. Further, the second study suggested that those with a high tendency to compare to other people reported a negative mood shift

after viewing the Facebook newsfeed, whilst those with low level of social comparison tendency experienced an increase in positive affect after this activity. These findings in studies 1 and 2 suggest that engagement with certain Facebook activities may impact the mood of individuals in different ways or at least to different extents. Findings so far therefore suggest that even if self-evaluation variables do not predict the types of Facebook activities that individuals prefer to engage in, they may have a role in how one's mood might alter as a consequence of engaging in various activities.

Identifying differences in self presentational techniques and attempts on Facebook may offer insight into why individuals low and high in self-evaluation variables may differ in the extent to which engagement with Facebook impacts them emotionally in terms of affect and mood change. In the last study it was observed that the poor do not always get richer during online interactions, indeed they may get poorer, whilst the rich get richer (Social Enhancement Hypothesis; Valkenburg, Schouten, & Peter, 2005; Valkenburg & Peter, 2007). Looking at the self presentational attempts displayed on Facebook and how this might differ amongst high and low scorers in self-evaluation variables might assist in the interpretation of such findings. If the manner of self presenting on Facebook differs amongst those low and high in such variables (e.g. self-esteem) it may be that this self presentational content impacts upon the way other individuals perceive and interact with them, and this may in turn colour their own experience of Facebook interaction. Examining in more detail the potential for self presentational differences amongst low

and high scorers in such variables may therefore assist in understanding the effects reported earlier in this thesis. However literature reviewing suggests that consideration of self-evaluation variables in relation to an individual's self presentation attempts on Facebook has been considered in a limited way to date.

5.1.1 Self-esteem and self presentation on Facebook

Reviewing research around self-esteem and Facebook use has suggested that those with low self-esteem attempt to compensate lack of social confidence or competence, referred to as the Poor-Get-Richer Hypothesis (Poley & Luo, 2012). Research suggests that those with low self-esteem will attempt to compensate for their low self-esteem when presenting the self online by 'compensatory friending', (collecting large numbers of Facebook friends). Research has suggested that those with low self-esteem aim to look popular on Facebook (Zywica & Danowski, 2008; Utz & Beukeboom, 2011) and may attempt this via collecting large numbers of friends (Lee, et al., 2012). For this reason the number of friends an individual has on Facebook could be interpreted as a self presentation attempt.

The associated difficulty with this compensatory friending is that research suggests that those with low self-esteem will engage in friending to the extent that they friend people they do not know well (Tazghini & Siedlecki, 2013) and, in keeping with this, when Facebook friends are not known well self presentational concerns are more likely (Bazarova, Taft, Choi & Cosley, 2012). Therefore those with low self-

esteem who may have collected many Facebook friends as a compensatory mechanism may also become more wary of how they self present. This is supported by research which suggests low self-esteem individuals are more likely to view content than to post on Facebook (Tazghini & Siedlecki, 2013). This is consistent with the notion that those with low self-esteem have a protective self presentational style (Rosenberg & Owens, 2001) and would suggest that although those with low self-esteem attempt to compensate in some ways, such as collecting Facebook friends, they are not always able to overcome the characteristics of their low self-esteem, for example they may be less confident in expressing their opinions.

Looking to the findings of Forest and Wood (2012) further supports the idea that those with low self-esteem are limited in how much they can compensate for their low self-esteem when attempting online self presentation. Forest and Wood reported that the Facebook content of those with low self-esteem was rated as more negative and less positive than their higher self-esteem counterparts. Similarly Carpenter (2012) notes that low self-esteem individuals seek social support on Facebook more than they provide it, which may offer an explanation for the greater amounts of negative content in their status updates. Equally, however, lower levels of self-esteem tend to be associated with negative emotionality (Leary & MacDonald, 2003) whereas those with high self-esteem reportedly hold highly favourable self views (Baumeister et al., 2003). Therefore it may be suggested that low self-esteem people, although they may like Facebook and find it assists them to overcome

communication barriers (Ellison, Steinfield & Lampe, 2007) with increased control over self presentation and disclosure (Valkenburg & Peter, 2011), may find that they cannot easily overcome worries they have around looking popular, self presentational concerns, and negativity, and this is demonstrated in their self presentational style on Facebook.

5.1.2 Facebook self presentational style and social comparison tendency

Although researchers note social comparisons are likely to occur frequently on Facebook (e.g. Lee, 2014) few studies to date have considered this aspect of social networking sites including Facebook. However researchers have suggested that information obtained via Facebook and similar sites is likely to be idealised and include overly positive information about others (Manago, 2014). Consistent with this idea research has noted that these types of comparisons may lead to negative self perceptions (Vogel et al., 2015), feelings of inferiority (Haferkamp & Kramer, 2011) and jealousy and dissatisfaction (Fox & Moreland, 2015). The second study of this thesis supports this idea observing that those who compare frequently to others experienced decreases in hedonic tone (overall mood pleasantness) after viewing the Facebook newsfeed whilst those who compared less often to others experienced an increase in hedonic tone after this activity.

However it would appear that research has yet to consider in depth how individuals respond to these types of optimal portrayals of others when

engaging with their own Facebook profile, that is, their online self presentation attempts. It is notable for example that within the second study there was no significant mood change difference amongst those low and high in social comparison tendency after they edited their Facebook profile, but the question of the content of such self presentation attempts remains unknown. Would these individuals who have a high tendency to compare to others respond to social comparison exposure by providing their own overly positive self content? Research suggests that individuals do feel encouraged to self present in a narcissistic and self focused manner on their Facebook pages (Wallace, 2015, Wickel, 2015) but it would appear that the types of language individuals employ on their status updates as a function of their social comparison tendency has not been explored, or indeed if those low and high in social comparison tendency differ in other self presentational tactics on Facebook, such as the number of Facebook friends they accrue.

5.1.3 Self-concept clarity and online self presentation

There is a notable lack of research into self-concept clarity and online self presentation, however, previous research suggests that those with low self-concept clarity may use the Internet in a different way to those with higher levels of self-concept clarity. Matsuba (2006), for example, surveyed University students and assessed a variety of measures including pathological Internet use, motivation for Internet use, loneliness, relationship quality and ego identity as well as self-concept

clarity. The findings around self-concept clarity suggested that this attribute correlated negatively to the amount of time spent online, to loneliness and problematic Internet use symptoms, communication and entertainment motives and positively with an information seeking motive. Self-concept clarity also negatively correlated with using the Internet to pass time, download music, instant messaging and negatively correlated with using the Internet to interact with strangers and possessing secret email addresses or secret online screen names. Matsuba's findings may suggest that those with a lower level of self-concept clarity may prefer to engage with an online self presentation which is less identifiable in their offline life (noting for example the use of secret screen names and interaction with strangers). In keeping with this, recent research has examined the relationship between self-concept clarity and the use of the Internet for the purposes of experimental self presentation within an adolescent population (Fullwood, James & Chen-Wilson, 2016).

Fullwood et al., assessed adolescents for their levels of self-concept clarity and degree of Facebook intensity and examined this in relation to the online self presentation styles these individuals employ online. The Presentation of Online Self Scale (POSS) used in the study assessed individuals' perceptions of their own online self presentational behaviours, with facets including the extent to which individuals presented an ideal self on the Internet (Ideal Self), a Consistent Self on the Internet (which was in parity with their offline self), the extent to which individuals attempted to present different versions of the self across online environments (Multiple Selves) and the extent to which

individuals held a preference to present themselves online rather than offline (Online Presentation Preference).

It was suggested that self-concept clarity negatively correlated with number of Facebook friends, whilst number of Facebook friends negatively predicted reporting the presentation of Multiple Selves across online platforms. As such those with an unclear self-concept had fewer Facebook friends, and those with fewer Facebook friends also reported engaging in the presentation of Multiple Selves online. In keeping with this researchers have suggested that within online settings individuals can explore different aspects of their identity (Amichai-Hamburger & Furnham, 2007), however Facebook is noted to commonly involve a 'one-to-many' style of communication (Pempek et al., 2009) (although private messages are an option;) and is also 'anchored in reality' (cf Zhao et al., 2008). For this reason, it has been suggested that individuals may attempt to project a self presentation to multiple audiences within a single context when engaging in some of Facebook's activities (Marwick & boyd, 2010; Brandtzæg et al., 2010). Similarly researchers have observed that individuals may experience difficulties presenting themselves on Facebook in a way which displays a single self appropriate for the variety of social groups in which they belong (Stephenson-Abetz & Holman, 2012), with the suggestion that the multitude of audiences on Facebook can act as a barrier to communicating with others (Vitak & Ellison, 2012). Therefore as noted by Fullwood et al., it may be the case that it is easier for individuals to present multiple versions of the self when there are fewer individuals observing this self presentation and

therefore fewer people to potentially identify discrepancies between self presentations. A similar point was raised by Walther et al., (2009) who noted Facebook friends would readily challenge a misleading self presentation they observed online, which may explain why those with lower self-concept clarity may choose to have fewer friends on Facebook than those with clearer self-concept.

Similarly this study also suggested that self-concept clarity negatively predicted Multiple Selves (reported engagement with presenting different versions of the self across online environments) as such those with an unclear self-concept reportedly present different selves across online environments, perhaps to enable self discovery. It was also notable that hours spent on Facebook positively predicted Multiple Selves. This suggests that those who have a high desire to create multiple self presentations online may expend more time on Facebook than those who are less concerned with presenting multiple selves across online arenas. This may suggest that the process of self presenting on Facebook may be especially time intensive if not cognitively demanding for some individuals.

It was also observed that low and high self-concept clarity individuals differed in other ways in their self presentation attempts. As noted above whilst self-concept clarity negatively predicted Multiple Selves, it was reported that high self-concept clarity positively predicted Consistent Self (presenting a self online consistent with the offline self), with suggestion that it may be the case that those who have a clear concept of who they

are will be less motivated to display alternative selves in online settings due to their existing confidence about their self attributes. These combined findings therefore serve to illustrate that self-concept clarity may have predictive value in explaining aspects of online self presentation. This research therefore suggests that those with low self-concept clarity may prefer to present multiple and idealised self presentations across online settings, whilst those with a clearer self-concept may prefer to present a unified online and offline self. Coupled with the fact that that low self-concept clarity is characterised by a lack of clear consistent and stable self views (Campbell et al 1996; Showers & Zeigler-Hill, 2012), it may therefore be anticipated that the language used by these individuals may differ from those who have a clear self-concept and parity of online and offline self presentation when their linguistic style is considered. However the differences between those high and low in self-concept clarity in terms of their linguistic markers of Facebook use appears not to have been explored in research to date. The paucity of research which has investigated the link between self-concept clarity and online self presentation further emphasises the need for more detailed study of the area.

5.1.4 The present study:

Despite the continued popularity of Facebook amongst its users (Duggan et al., 2015) and the enduring research interest in self-esteem and social comparison tendency as self-evaluation variables these variables are rarely combined in research examination. Self-concept clarity, despite

holding a close relationship to self-esteem (Campbell et al., 1996), is also rarely considered in the context of Facebook. Research directly assessing the content of Facebook profiles and the predictive value of self-evaluation variables also remains limited. Further, individuals are often asked to reflect on previous behaviours, despite the fact people are often inaccurate when self reporting in this way (Sagioglou & Greitemeyer, 2014). When making judgements about aspects of the self, including behaviours, individuals tend to use a better than average bias (Alicke et al., 1995). As such individuals may cite behaviours they perceive as desirable on Facebook as being carried out by themselves more frequently than is the case. Removing self report of Facebook behaviours may provide a clearer insight into the actual types of words and other self presentational behaviours exhibited on Facebook.

The current study will therefore examine content from real Facebook profiles and status updates to increase ecological validity and consider aspects of these profiles in relation to the self-evaluation factors of self-esteem, social comparison tendency and self-concept clarity. This builds on the previous studies in this thesis which have considered how individuals may feel after spending time on Facebook, what they spend time doing on the site and the contribution of self-evaluation factors, as well as how individual differences in these self-evaluation variables may influence how individuals feel after spending time on specific Facebook tasks (profile editing, viewing the newsfeeds and control condition).

The present research will therefore assess the self-evaluation variables of a sample of Facebook users and extract the last ten status updates these individuals have provided on Facebook. These status updates will be subjected to linguistic analysis, to gain information about the types of words employed. Word choice reportedly reveals more about a person than they can possibly imagine, providing a window into individuals' social worlds and personality (Pennebaker, 2011) and the perceptions held by that individual (Semin & Fiedler, 1988).

Linguistic analysis of the status updates will be carried out using the text analysis computer programme Linguistic Inquiry and Word Count (LIWC Pennebaker, Chung, Ireland, Gonzales, & Booth, 2007), pronounced 'luke' (Tausczik & Pennebaker, 2010), which is widely used within applied and psychological research (see Pennebaker, Mehl & Niederhoffer, 2003). Its fundamental use has been around identifying word types and features which provide insight into the underlying psychology of the person or groups of interest (Chung & Pennebaker, 2012). The programme is formed of two parts; a processor and a dictionary. The processor examines a text file and compares each word within the text to those in the dictionary (Tausczik & Pennebaker, 2010).

Various software updates have taken place since the programme was created in the early 1990s, however the premise of comparing specific words within language files against a dictionary remains at its core (Pennebaker et al., 2007). Once the text in each file has been read by the programme and each word compared against the dictionary, the

total counts are provided for various output variables (an example is available in Appendix 10.3.2).

There are approximately 80 of these output variables, which cover descriptor categories (e.g. words per sentence, word count), linguistic dimensions (there are 22 of these, including pronouns, auxiliary verbs) as well as psychological construct categories (e.g. cognition). 7 personal concerns categories (e.g. work, home) also feature in addition to 3 paralinguistic dimensions (fillers, nonfluencies) and punctuation categories (commas for example).

Of particular interest here are the psychological construct categories, which code the words in a text which connotes various psychological processes including affective processes and cognitive processes. Affective processes refer to words which convey a level of emotion or are in themselves emotion words, although the positivity or negativity of such emotion is not differentiated between (e.g.' happy' and 'cried', are both affect words but may represent different types of affect). However the affective processes category can be sub sectioned into two subcategories, namely positive emotion (e.g., love, nice, sweet) and negative emotion (e.g., hurt, ugly, nasty). Tausczik & Pennebaker, (2010) suggest that the software is able to accurately identify positive emotions and negative emotions when analysing, and further that when describing a positive event more positive emotions are expressed, and when a negative event is described, more negative emotions are used in

the description. Since research (e.g. Forest and Wood, 2012) has suggested positivity and negativity of language may differ amongst those low and high in self-esteem for example, this word type is of particular academic interest within the current study.

A second category of interest falls within the cognitive processes domain. Cognitive processes is a category which is broad in scope and encompasses a variety of words which indicate levels of cognitive activity. Subcategories of relevance to the current study are the tentative language category (e.g. maybe, perhaps, guess) and certain language (e.g. always, never). These types of words attract attention within the current study since Tausczik & Pennebaker (2010) suggested that individuals who have a level of insecurity or uncertainty about the topic they are discussing use tentative language.

This is particularly relevant since previous research has suggested that those with low self-esteem have less confidence in their views and opinions than those with high self-esteem (Campbell, 1990) and can also be characterised by a protective self presentational style (Rosenberg & Owens, 2001). As such there may therefore be potential for this to manifest itself as differences in tentative and certain language amongst high and low self-esteem individuals. Similarly, previous literature has suggested that low levels of self-concept clarity is associated by a lack of clear, consistent and stable views of the self (Campbell et al 1996; Showers & Zeigler-Hill, 2012) and subsequently there is anticipation of differences in the use tentative and certain language between those with

clear and less clear self views within the linguistic content of status updates.

In addition to analysis of status updates, information will also be taken from the Facebook profile pertaining to the number of Facebook friends an individual has to examine the relationship between this self presentation attempt and the aforementioned self-evaluation variables. Based on the literature reviewed above around how the differing levels of self-evaluation variables (self-esteem, self-concept clarity, social comparison tendency) may predict self presentational styles, a series of hypotheses and a research question have been formulated. These predicted effects are summarised below.

5.1.5 Self-esteem hypothesised effects

It is hypothesised that self-esteem will predict number of Facebook friends in a negative direction, (Hypothesis 1) and is based on the findings of Lee, et al., (2012) who suggest those with low self-esteem have a larger number of Facebook friends and Zywica and Danowski, (2008) and Utz and Beukeboom, (2011) who suggest that those with low self-esteem make efforts to appear popular on Facebook. It is interpreted that holding a large number of friends may be perceived as an attempt to present the self as popular, therefore representing a positive self presentation attempt.

Building on Hypothesis 1 and based on the notion that research suggests that the less well known Facebook friends are the higher the prevalence

of self presentational concerns (Bazarova, Taft, Choi and Cosley, (2012) it is predicted that self-esteem will negatively predict the use of *tentative* language (Hypothesis 2).

Finally, based on the findings of Forest and Wood (2012) it is suggested that self-esteem will predict use of negative emotion in a negative direction, (Hypothesis 3) and positive emotion in a positive direction (Hypothesis 4). This latter hypothesis is also based on research which suggests that high self-esteem individuals hold highly favourable self views (Baumeister et al., 2003).

5.1.6 Self-concept clarity hypothesised effects

Since research suggests that those with a low level of self-concept clarity have an uncertain knowledge of who they are and the traits that they possess (Showers & Zeigler-Hill, 2012; Campbell 1990) it is anticipated that self-concept clarity will predict use of *tentative* language in a negative direction, (Hypothesis 6) and *certain* language in a positive direction (Hypothesis 7). Further based on the findings of Fullwood et al., which suggest that those with low self-concept clarity have a preference for the presentation of multiple selves online, and the anchored reality environment in which Facebook purportedly operates (Zhao et al., 2008) it is anticipated that there may be an associated difficulty in self presenting on Facebook status updates for those low in self-concept clarity, resulting in the greater use of *tentative* language.

5.1.7 Social comparison tendency hypothesised effects

Previous research both in this thesis (the first study) and elsewhere (e.g. Lee, 2014) has suggested that self-esteem and tendency to social comparison are negatively correlated, such that those with a high tendency to social comparison have lower levels of self-esteem. Since it is suggested above that those with low self-esteem have more Facebook friends than those with high self-esteem (Lee, et al., 2012) it may be anticipated that those with high social comparison tendency may also have fewer Facebook friends. However due to the dearth of research to inform how social comparison tendency may inform self presentation attempts (remembering that number of Facebook friends can be regarded as a self presentation attempt) the direction of this effect is not specified. As such it is proposed that social comparison tendency will predict the number Facebook friends (Hypothesis 8).

5.1.8 Social comparison tendency research question

Whilst previous research on Facebook and social comparisons has suggested that social comparisons can lead to negative affect (e.g. Haferkamp & Kramer, 2011 and the second study in this thesis) it is less clear from research evidence how an individual's level of social comparison tendency will predict their self presentational style on the site. For this reason a research question of: 'How will social comparison tendency predict use of positive and negative emotions in Facebook status updates?' is proposed. The focus of negative and positive emotions is chosen because Facebook research has suggested that

conducting social comparisons may lead to negative affect (e.g. Haferkamp & Kramer, 2011; Lee 2014) and therefore one may anticipate more negative emotional content in status updates in response to social comparison by those who compare to others frequently. Alternatively it could be the case that those who compare frequently to others overcompensate for these social comparisons by providing overly positive status updates (positive emotions). This is tentatively suggested since research suggests that self portrayals on Facebook are usually idealised and overly positive (Manago, 2014).

For clarity, the hypotheses and research question are summarised here:

Hypothesis 1: Self-esteem will predict number of Facebook friends in a negative direction.

Hypothesis 2: Self-esteem will negatively predict the use of *tentative* language.

Hypothesis 3: Self-esteem will predict use of *negative emotion* in a negative direction.

Hypothesis 4: Self-esteem will predict use of *positive emotion* in a positive direction.

Hypothesis 5: Self-concept clarity will positively predict number of Facebook friends.

Hypothesis 6: Self-concept clarity will predict use of *tentative* language in a negative direction.

Hypothesis 7: Self-concept clarity will predict use of *certain* language in a positive direction.

Hypothesis 8: Social comparison tendency will predict the number Facebook friends.

Research question: How will social comparison tendency predict use of positive and negative emotions in Facebook status updates?

5.2 Method

5.2.1 Design

This study employed a repeated-measures design. The independent variables were self-esteem, self-concept clarity and tendency to social comparison, whilst the dependent variables were the percentage of positive emotions, negative emotions, tentative and certain language within the last ten status updates, as well as the number of Facebook friends held. Participants completed the independent measures before providing a link to their Facebook page.

5.2.2 Participants

Power analysis for a multiple regression with three predictors (self-esteem, self-concept clarity and tendency to social comparison) was conducted in G*Power to determine a sufficient sample size using an alpha of 0.05, a power of 0.80, and a medium effect size (*f2* = 0.15) (Faul et al., 2013). Based on the aforementioned assumptions, the

desired sample size was 77 participants, which was achieved.. 128 individuals primarily from a large West Midlands University engaged with the study; 103 female, remainder male. The majority of these participants were recruited from the Psychology Students Participant Pool at the University and received course credit for participation. The remainder of the participants were either students from other courses within the University or Facebook users obtained via a snowball sampling method. Of this total, 103 were female and 25 were male. The mean age was 25.60 years (SD 9.08) ranging between 18 and 62 years of age.

Of these participants one participant declared that they did not hold a Facebook account when completing the section of the study asking for the URL to their Facebook page, therefore this participant was removed from further analysis and only their demographic information was retained.

A number of participants did not make available on their Facebook profile the number of Facebook friends that they had and also had less than ten status updates available to view (n10). A further 11 participants posted non-linguistic content within their last ten status updates (such as the sharing of URLs or the sharing of images). These 21 participants were removed from analysis and retained only to provide demographic information. This left a revised sample size of 106 participants.

5.2.3 Materials

5.2.3.1 Demographic information

Demographic information in the form of age and gender was provided by participants who then completed a series of self-evaluation questionnaires.

5.2.3.2 The Iowa-Netherlands Comparison Orientation Scale (INCOM) (Gibbons and Buunk, 1999). See Appendix 10.1.1.1

See section 3.3.3 for details of this scale. The Cronbach Alpha for use in the current study was .77.

5.2.3.3 The Rosenberg self-esteem scale (Rosenberg 1965). See Appendix 10.1.1.2

See section 3.3.4 for details of this scale. The Cronbach Alpha for use in the current study was .92.

5.2.3.4 The self-concept clarity scale (Campbell et al. 1996). See Appendix 10.1.1.3

Refer to section 3.3.5 for details of this scale. The Cronbach Alpha for use in the current study was .90

5.2.3.5 Last ten status updates

Text from the last ten status updates of each participant were analysed using Language Inquiry and Word Count (LIWC) software (Pennebaker,

Francis & Booth, 2007). This software package contains a dictionary within which there are 80 output variables, covering linguistic dimensions and words which tap into psychological constructs and personal concerns. The results of which are formatted as either a percentage of the total words within the sample (uncorrected method) or the presence or absence of a word type (binary method) (Pennebaker et al., 2001). These differential methods will be elaborated on below. Versions of this instrument are used widely within psychological research (DeWall et al., 2011; Underwood, et al., 2012; Fox Hamilton & Kirwan, 2013). Previous research has also employed specific word categories from the dictionary in accordance with research aims (Underwood, et al., 2012; DeWall, et al., 2011).

The authors note the difficulty in assessment of reliability and validity of such text programmes: a high level of correlation between answers is suggested to be indicative of the validity of a questionnaire, whereas with spoken or written text individuals are unlikely to write or speak the same point several times (Pennebaker et al., 2007). However Pennebaker et al., (2007) report that analyses comparing the LIWC scale analysis and judgement ratings do correlate highly suggesting an externally valid scale. Full reliability analyses of each of the word count categories is listed in Pennebaker et al., (2007), (for example the Cronbach alpha for anger words is .92 for binary method and .55 for uncorrected method). As demonstrated in the example the alpha values are also dependent on style of usage; namely whether the binary or uncorrected method is chosen.

Binary word counts involve allocating a word type a score of 1 or 0. 1 allocated if a word type occurs on one or more occasion within the text, and 0 if it does not feature at all. The uncorrected word counts provide a percentage of the total words falling within that the word type. Whilst both methods can encounter issues, the authors note for example that binary (present or absent) methods can overestimate reliability whilst the uncorrected method underestimates reliability (the difference is notable in the anger example above). The binary method Pennebaker et al., (2007) state can overestimate reliability due to text length - the longer the text the more likely a word type is to have occurred, whilst the uncorrected method can underestimate reliability because there are variable levels of word usage within each category. However the decision was made in the current study to use the uncorrected method since it was believed that this would reveal more information about word usage rather than simply if a word type was present or absent.

The text from the last ten status updates were combined into one document per participant see Appendix 10.3.3 for examples;) and analysed for use of language predicted to relate to the varying self-evaluation variables in accordance with the hypotheses outlined above.

5.3 Procedure

Participants engaged with the study electronically via accessing the study URL. The webpages for the study began with information sheets outlining study details and participant requirements. Informed consent was obtained and participants were requested to provide demographic

information and completed the above measures of social comparison tendency (Gibbons & Buunk, 1999) self-esteem (Rosenberg, 1965) self-concept clarity (Campbell et al, 1996). Upon completion of these scales participants provided the URL for their Facebook profile page, in addition, participants were directed to a URL of the researcher's Facebook account with a request to 'friend' the researcher. Within the current study issues may be raised around the 'friending' of participants for the study. In line with practice by Lunnay, Borlagdan, McNaughton and Ward, (2015), participants were given transparency around the purpose of the Facebook friendship, since as Lunnay and colleagues note, Facebook friendships denote all types of relationships on Facebook. Participants were informed via information sheet that the Facebook account of the researcher was used only for the purposes of the study, and did not constitute a personal Facebook account. In addition on completion of the study the Facebook account of the researcher was deactivated.

Scores for social comparison tendency, self-esteem and self-concept clarity were computed into total scores as per guidelines issued by the scale authors. The researcher then accepted friend requests received from participants. Because it was important to be able to link the profile content to the responses to these scales participants were required to provide a unique identifier when completing the self-evaluation questionnaires. This unique identifier took the form of the URL of their Facebook page which participants pasted into an allocated box on the demographic section of the questionnaire. This ensured that when friend

requests were received by participants these could then be linked up to the completed self-evaluation questionnaires.

Information regarding the number of Facebook friends held by each participant was obtained by viewing the participant's Facebook profile page. In addition when viewing each participant's Facebook profile, the experimenter scrolled back through the profile until ten status updates had been viewed. These ten status updates were then highlighted, copied and pasted into a single word processing document per participant and sampled for linguistic analysis.

The codebook used as part of this process can be found in Appendix 10.3.1, whilst tabular representation of the linguistic categorisation as determined by LIWC can be found in Appendix 10.3.2

5.3.1 Modifications to transcripts of last ten status updates:

A number of status updates contained linguistic qualities which if unchanged would result in the words failing to be detected by the language software, whilst occasionally it appeared status updates contained content not written by the profile holder. Assessment was made on a case by case basis and reference was made to the software dictionary for guidance on typographical issues. Typographical modifications were made which are detailed in Table 10. Appendix 10.3.3 provides examples of the status updates used and Appendix 10.3.4 demonstrates examples of how these were modified.

Table 10: *Modifications made to last ten status updates*

1. Removal of evident typing errors (e.g. fgod)
2. Removal of hashtag symbol (#) to enable detection by dictionary but retention of original words
3. Modification of abbreviations into upper case where retaining the lower case presentation would prevent software recognition, (e.g. lmao) however retention of formatting where software enables differentiation of abbreviations capitalised and in sentence case (e.g. lol v LOL)
4. Removal of duplicate letters in some abbreviations to enable software recognition of abbreviations (e.g. LOOL)
5. Modification of spellings where retention of original spelling would disable dictionary detection (e.g. 2mora, ur, n, cant)
6. Reforming of exaggerated spellings and transforming into correct spelling (e.g. aaaaaalways)
7. Removal of large fragments of text seemingly pasted from elsewhere but not the content of the author (e.g. received a message from school…..). Where included in the status updates the profile owner's own comments on this content were retained.

Following this modification process the status updates were assessed via linguistic software for the percentage occurrence of 'positive emotions' (such as love, nice, sweet); 'negative emotions' (hurt, ugly, nasty); 'tentative' (maybe, perhaps, guess) or 'certain' language, (such as always, never) within the combined ten status updates of each individual.

5.3.2 Assumptions testing for multiple regression analyses.

A first point of consideration should be around sample size, as discussed in section 3.5.3.4. In the current study a larger sample size would have been desirable. However, Stephens, (1996) recommends 15 participants per predictor permits a reliable equation for multiple regression, which in this instance would be 45 participants. A more stringent criterion is set by Tabachnick and Fidell, (2012) who suggested that eight times the number of independent variables plus 50 would be appropriate, in this case equalling a suggested 74 participants. With this in mind multiple regression analysis is attempted.

Checks for normality of the distribution of dependent variables were conducted in preparation for multiple regression analyses. Viewing of histograms for the dependent variables 'positive emotions', 'negative emotions', 'tentative language', 'certain language' and 'number of Facebook friends' suggested a somewhat skewed distribution for these variables (Means and standard deviations are displayed in Table 11, with the histograms themselves available in Appendix 10.3.5). For this reason robust regression (using bootstrapping) was employed. The SPSS output of these regressions is available in Appendix 10.3.6. This process permits estimations to be made of the properties of the sampling distribution based on the sample obtained. A number of samples (named bootstrap samples) are taken from the sample data with parameters calculated for each bootstrap sample, with this process repeated multiple times. These samples are then used to form revised confidence intervals, standard

errors and subsequently significance levels for coefficients. The process of bootstrapping therefore involves the re-estimation of standard errors, confidence intervals and significance values such that they are no longer dependent on the assumptions of normality, thus allowing a more accurate estimate than multiple regression analyses where normality or certain other regression assumptions are violated (Field, 2013).

Within the analyses below, 95% confidence intervals are employed as is the convention in psychology research, with the option for Bias Corrected and Accelerated Confidence interval (BCa) selected. This is recommended for bootstrapped confidence intervals since of the two choices (Percentile and BCa), the BCa is more accurate (Field, 2013). 1000 bootstrap samples were used in all below analyses as this is reported to be a "reasonable number" (Field, 2013 p199).

Table 11: *Mean values (standard deviation in parenthesis) for the percentage of status updates formed of the varying linguistic descriptors and the number of Facebook friends held by profile owners.*

	Mean (SD)
Positive emotions	6.90 (6.90)
Negative emotions	1.93 (2.49)
Certain language	1.76 (1.91)
Tentative language	1.41 (1.82)
Number of Facebook friends	437.59 (358.31)

5.3.3. Multiple regression analyses predicting language use and number of Facebook friends.

A series of robust linear regressions with the above bootstrapped specifications were conducted with the predictor variables of self-concept clarity score, social comparison tendency score and self-esteem. The dependent variables were formed of each of the LIWC language categories identified above ('positive emotions' 'negative emotions' 'tentative' language, 'certain' language) and number of Facebook friends each entered as dependent variables within separate multiple regression analyses.

5.3.4 Positive emotions

A significant model emerged explaining 6.2% of the variance $F(3,102) = 3.318$; $p < 0.05$, $f^2 = 0.10$. As displayed in Table 12 only self-esteem was a significant predictor in the model, suggesting that those with high self-esteem used a larger percentage of positive emotions within their last ten status updates.

Table 12: *Positive emotions displayed within the last ten status updates. Unstandardised (B) and standardised (β) regression coefficients for the variables entered into the model with 95% bias corrected and accelerated confidence intervals reported in parentheses. Confidence intervals, standard errors (SE B) and significance values (p) are based on 1000 bootstrap samples.*

Variable	B	SE B	β	*p*
Self-concept clarity score	0.01 (-0.14, 0.15)	0.07	0.01	0.92
Social comparison tendency score	-0.09 (-0.49, 0.23)	0.16	-0.08	0.58
Self-esteem score	0.30 (0.04, 0.58)	0.15	0.26	0.04

5.3.5 Number of Facebook friends

A significant model emerged explaining 6.7% of the variance in number of Facebook friends $F(3,102) = 3.519$; $p < 0.05$, $f^2 = 0.10$.

As displayed in Table 13 self-concept clarity was a significant predictor in the model, such that self-concept clarity negatively predicted number of Facebook friends. Social comparison tendency was approaching significance at 0.05 and so will be tentatively considered as approaching significance when evaluating the results. The positive direction of the relationship suggests those with higher levels of social comparison tendency may have more Facebook friends. Self-esteem was not a significant predictor in the model.

Table 13: *Number of Facebook friends. Unstandardised (B) and standardised (β) regression coefficients for the variables entered into the model with 95% bias corrected and accelerated confidence intervals reported in parentheses. Confidence intervals, standard errors (SE B) and significance values (p) are based on 1000 bootstrap samples.*

Variable	**B**	**SE B**	β	***p***
Self-concept clarity score	-8.98 (-18.31, -1.05)	4.47	-0.25	0.04
Social comparison tendency score	10.21 (1.00, 19.79)	5.39	0.17	0.05
Self-esteem score	4.82 (-7.21; 18.61)	6.99	0.08	0.49

5.3.6 Negative emotions

Whilst a significant model emerged for positive emotions, the converse of this, negative emotions, did not reveal a significant model (adjusted R^2 - 0.02 $F(3,102) = .209$, $p > 0.05$; $f^2 = 0.10$.) as detailed in Table 14.

Table 14: *Negative emotions displayed within the last ten status updates. Unstandardised (B) and standardised (β) regression coefficients for the variables entered into the model with 95% bias corrected and accelerated confidence intervals reported in parentheses. Confidence intervals, standard errors (SE B) and significance values (p) are based on 1000 bootstrap samples.*

Variable	**B**	**SE B**	β	***p***
Self-concept clarity score	0.02 (-0.02, 0.08)	0.03	0.10	0.43
Social comparison tendency score	-0.00 (-0.09; 0.08)	0.04	-0.01	0.91
Self-esteem score	-0.04 (-0.17; 0.08)	0.05	-0.10	0.47

5.3.7 Tentative and certain language.

No significant model emerged for either tentative language (adjusted R^2 -0.02; $F(3,102) = .188$, $p > 0.05$; $f^2 = 0.10$, (see Table 15) or for certain language (adjusted R^2 -0.00; $F(3,102) = .932$, $p > 0.05$; $f^2 = 0.03$), (see Table 16).

Table 15: *Tentative language displayed within the last ten status updates. Unstandardised (B) and standardised (β) regression coefficients for the variables entered into the model with 95% bias corrected and accelerated confidence intervals reported in parentheses. Confidence intervals, standard errors (SE B) and significance values (p) are based on 1000 bootstrap samples.*

Variable	**B**	**SE B**	β	***P***
Self-concept clarity score	0.02 (-0.04, 0.06)	0.03	0.09	0.53
Social comparison tendency score	0.02 (-0.06, 0.09)	0.03	0.05	0.60
Self-esteem score	-0.02 (-0.10; 0.07)	0.04	-0.07	0.52

Table 16: *Certain language. Unstandardised (B) and standardised (β) regression coefficients for the variables entered into the model with 95% bias corrected and accelerated confidence intervals reported in parentheses. Confidence intervals, standard errors (SE B) and significance values (p) are based on 1000 bootstrap samples.*

Variable	**B**	**SE B**	β	***p***
Self-concept clarity score	-0.02 (-0.07, 0.04)	0.03	-0.08	0.57
Social comparison tendency score	0.04 (-0.03, 0.12)	0.04	0.14	0.28
Self-esteem score	0.03 (-0.04, 0.12)	0.04	0.10	0.45

5.3.8 Results summary

Self-esteem positively predicted use of positive emotions within the last ten status updates, no other linguistic differences were observed as a function of self-evaluation variables. Self-concept clarity negatively predicted number of Facebook friends, whilst there was tentative suggestion social comparison tendency positively predicted number of Facebook friends.

5.4 Discussion.

Discussion will begin with contemplation of the linguistic hypotheses and the social comparison research question, before moving forward to consider findings around number of Facebook friends. This will be followed by limitations and future directions.

5.4.1 Language use and self-evaluation variables.

Contrary to expectations, language use as a function of self-evaluation variables did not differ between low and high scorers in several domains. For example those low and high in self-concept clarity did not differ in their use of tentative and certain language (not supporting Hypothesis 6 or Hypothesis 7), whilst self-esteem did not negatively predict the use of tentative language (not supporting Hypothesis 2). Whilst research evidence would suggest that low levels of self-concept clarity and self-esteem are associated with less certainty around self attributes than higher scorers, (Campbell, 1990, Campbell et al., 1996) it would appear that this is not detectable amongst Facebook status updates in linguistic terms. There are affordances to be noted around the medium, for example the increased amount of time available to craft a self presentation compared to face to face interactions (Walther, 1996) and the greater level of control over disclosure and self presentation (Valkenburg & Peter, 2011) compared to face to face settings which may explain these findings. Consistent with this notion, research has noted that identity claims (attempts to display a self presentation to elicit a

desired impression) can increasingly be controlled for in online settings compared to face to face interactions (Vazire & Gosling, 2004).

It should be noted however that whilst within online environments such as Facebook there are identity cues which individuals have full control over (self generated cues) there also exist other generated cues - content displayed by others about the self (e.g. wall postings) which are less open to the control of the profile holder (Antheunis & Schouten, 2011). Knowledge of the availability of other generated cues may place limitations on the creativity of self expression individuals' use in their self presentation attempts on Facebook. For example, others may provide information contrary to the self the profile holder is attempting to portray. This may place limitations on self expression, with research suggesting that online friends will dispute a self presentation which deviates too far from the offline reality (cf Walther et al., 2009).

Within the online world individuals may find it easier to present multiple identities in some applications but not others. In keeping with this idea, research also suggests that via online interaction individuals can explore different aspects of their identities and both hold and develop multiple identities simultaneously (Amichi-Hamburger & Furnham, 2007). The users in the current study may have engaged with other platforms to interact with others in a different manner, but the current analysis did not permit examination of data from other sites. Further, previous research suggests that those with low self-concept clarity might prefer more anonymous online environments to interact with others (Fullwood

et al., 2016., Matsuba, 2006), and as such comparison of linguistic content in such domains may have been revealing.

Similarly, research into social comparison tendency has suggested that conducting social comparisons on Facebook may lead to negative affect (e.g. Lee, 2014 and the second study in this thesis) but evidence of differential positive and negative emotions displayed as a function of social comparison tendency were not observed (considering the social comparison research question). However, recent research has acknowledged that whilst individuals may experience negative emotions as a result of social comparison on Facebook, they may make efforts not to portray their feelings around this information. Moninka, (2015) via a series of interviews highlighted the idea that whilst individuals often report feeling happy about the accomplishments others place on social media, they sometimes experience negative emotions, will sometimes lie to boost their feelings of self worth, and lie about the extent to which their own lives are going well. Therefore whilst individuals may be adversely impacted by social comparison information they may not display their emotional responses to this information on Facebook status updates in an attempt to 'keep up with the Joneses'. Again, it is noted that other forms of interaction with others (e.g. private messages) may have been revealing as research suggests that interaction via this communication method is a frequent occurrence on the site (Utz, 2015). This distinction between the types of online environments and the extent to which self disclosure is observable by multiple audiences has been considered by Attrill, (2015). Attrill noted that the ways in which

individuals choose to self present online may be dependent upon the communication medium or indeed the goal of the online communication, therefore it may be the case that content shared via a status update on Facebook may be more conservative in content than that which is shared via personal message, due to the more public arena status updates offer.

It was especially notable that the use of negative language did not differ as a function of self-esteem, therefore not supporting Hypothesis 3. This may also reflect the affordances the medium provides to enable an optimalised self presentation (Walther, 1996). It may also be understood by looking to the findings of Forest and Wood. They suggested that negative emotionality in Facebook updates was differentially perceived dependent on the self-esteem of the author (the profile holder). High self-esteem users who posted negative emotions received more attention and validation (in the form of likes and comments) than low self-esteem users when posting in a comparable way. It may be the case that those individuals with a low level of self-esteem in the current study might be especially aware of how they may be perceived by others because of the fear of social rejection which commonly constitutes this group (cf Sociometer Theory, Leary et al., 1995). As such these low self-esteem users may be especially mindful in their self presentation around negative emotions on Facebook. However it would appear that some aspects of language permeate into online self presentations more readily.

The results suggested that those with high self-esteem used more positive emotions than those with low self-esteem in their Facebook

status updates (supporting Hypothesis 4). This may be interpreted in the context of behavioural residue. Behavioural residue refers to the unintended information about the individual which is not consciously noted or accounted for within a self presentation (Gosling, Ko, Mannarelli, & Morris, 2002). As such even if individuals are especially mindful of the way they self present to others, behavioural residue or unintended artefacts remaining after self presentation may remain which portray the personality of the individual. It is likely that those with high levels of self-esteem have a more positive disposition than those with low self-esteem in general, as lower levels of self-esteem tend to be associated with negative emotionality (Leary & MacDonald, 2003) and this differential self belief may leak through in their language use on Facebook status updates.

5.4.2 Self-evaluation variables and number of Facebook friends.

Self-esteem was not a significant predictor of the number of Facebook friends an individual held therefore not supporting Hypothesis 1. This may relate to the suggestion above that those with low self-esteem might be particularly aware of the potential for social rejection from others as a result of self presentation. Research suggests that holding an excess of Facebook friends is seen as inauthentic and judgements of the profile owner are made based on this information (Tong et al., 2008). An awareness of how they are perceived and the potential for social rejection may therefore offer an explanation for the finding that those with low self-esteem do not have more Facebook friends than their high

scoring counterparts. Alternatively Facebook friends could represent an alternative function rather than a self presentational one, a consideration which is also contemplated in relation to the self-concept clarity findings around Facebook friends.

Contrary to expectations, those with low self-concept clarity had more Facebook friends (not supporting Hypothesis 5) Fullwood et al., (2016) found the converse to the present study, that self-concept clarity positively predicted Facebook friends, which they suggested might be because a larger number of Facebook friends equates to more individuals who may dispute a self presentation. It is possible that these individuals were at a different developmental stage to the ones in this study; this sample was adolescents, whilst the participants in the current study ranged between 18 and 62 years. It may be the case that adolescents and older adults differ in their use of Facebook friends on Facebook. Adolescence is known to be a time of developmental change and it is possible that increases in age may lead to a differential relationship between self-concept clarity and number of Facebook friends amongst older individuals. It is likely that the motivation for number of Facebook friends is a complex relationship and may be linked to other relevant factors. Consideration should also therefore be given to the possibility of alternative motives for the number Facebook friends; it might serve a function other than a self presentational one. For example, in the current study a negative correlation was observed between social comparison tendency and self-concept clarity, suggesting those with low self-concept clarity may be more prone to social comparison with others, although of

course causality cannot be assumed. As such an individual's Facebook friends may serve an additional function, to provide social comparison information.

It was also found that social comparisons tendency positively predicted the number of Facebook friends individuals' hold (therefore supporting Hypothesis 8), suggesting that Facebook friends may provide a valuable source of social comparison information. Research around Facebook social comparisons has suggested that individuals high in social comparison tendency are selective in their choice of other for social comparison. Fardouly and Vartanian, (2015) reported that participants in their study stated that they conducted appearance related social comparisons to distant peers on Facebook most frequently, followed by close friends and celebrities and were least likely to conduct these comparisons on family members on Facebook. As such, a large number of Facebook friends may represent an attempt to obtain a sufficient number of others for the purposes of social comparison.

5.4.3 Limitations and future directions

Limitations of the current study should be noted. A number of participants were unable to be included in the statistical analysis. Specifically a number of participants' Facebook profiles concealed the number of Facebook friends and contained less than ten status updates, or did not provide any words in their last ten status updates (for example instead of linguistic content an image or video was shared). This coupled

with the fairly modest sample size means that the results and implications should be interpreted with caution.

It should be noted that these analyses involved repeated testing on single data set. This type of approach is associated with an increased risk of type 2 error (identifying a significant effect where no real differences exist (Kirkwood, 1988). A form of error adjustment, such as the bonferroni correction involves the use of a more stringent significance value (reflecting the number of tests conducted;) however, in turn this decreasing significance value increases the risk of not identifying the existence of a true effect (Cohen, 1982), and indeed some such as Perneger (1998) are scathing of bonferroni adjustments, stating that they challenge common sense interpretation of results. In this instance, because subtle effects were anticipated, a more stringent significance value was not employed to counteract the repeated testing, as such this is acknowledged as a limitation of the current work.

Additionally, the direction of social comparisons (that is, if they are upward or downward comparisons) were not assessed, but rather only if people score high or low on a tendency to engage in social comparisons generally. However this measure does hold an advantage in that it does not ask individuals to make retrospective judgements on comparison behaviour, where they may be more likely to reflect on the appropriateness of their behaviour rather than the comparison process (Wheeler, 2000). This measure also does not ask individuals to make comparative ratings (e.g. 'are you better or worse than average at...') as

comparison to others might not be used to inform the rating, and further, people often perceive themselves as better than average in any case (Alicke et al., 1995). It should also be noted that the continued use of this measure throughout the thesis is also beneficial from a continuity perspective.

The present research only examined the last ten status updates of participants, and whilst this is arguably more informative than self report behaviour, which is often prone to biases and inaccuracies (cf Sagioglou and Greitemeyer, 2014), or responses to mock Facebook profiles (see Greitemeyer, 2016) a more longitudinal method of study may prove more revealing. Future research should therefore consider this aspect.

Previous research in this thesis has considered how self-evaluation factors and forms of self presenting may elicit different affective responses to time spent on Facebook, whilst the present study has examined in more detail how these self presentations may be formulated. What also warrants consideration is how well these self presentations are received by others (i.e. the impressions formed). The present research has not examined how successful individuals are in presenting a desirable self to others. Forest and Wood (2012) for example have noted that whilst individuals with low self-esteem feel better able to communicate with others via Facebook, the content of their posts is not always well received by others, and negative impressions of these individuals are sometimes formed.

5.4.4 Conclusions

The research suggests that when considering the predictive value of self-evaluation factors on the use of Facebook and manners of self presentation, individuals may not always be able to compensate for aspects of their personalities. Those with high self-esteem used more positive emotions in their self presentations via Facebook updates than those with lower self-esteem. The number of Facebook friends individuals held was predicted by self-concept clarity and social comparison tendency, and it appeared that it may be that rather than a self presentational function the number of Facebook friends may serve an alternative function such as that of social comparison. Overall, the present study offers a unique contribution to the field, including the consideration of a range of self-evaluation variables and has built on the findings of several relevant research studies. The present study examined genuine Facebook content, rather than employing mock or fake profiles (e.g. Greitemeyer, 2016). This is considered to be an advantage as it allows for a more accurate and reliable measure of how individuals interact with real people within their actual networks. The study has also examined the manner individuals actually self present on Facebook rather than limiting analysis to what individuals report that they do, knowing that these reflections may often be inaccurate or subject to social desirability biases (Sagioglou & Greitemeyer, 2014).

It should be noted that the majority of similar studies have investigated personality factors (e.g. the Big Five and narcissism), however

researchers have recently begun to stress that social comparison is a frequent occurrence on social networking sites (Fox & Moreland, 2015; Lee, 2014). However, despite this, analysis of social comparison tendency and a range of self-evaluation factors does not appear to have been comprehensively examined in the manner of this study to date. Whilst self-esteem is frequently considered, clarity of self-concept remains very rarely considered in relation to self presentational tactics employed on social media. At the time of writing it would appear that there is a dearth of studies which have examined if clarity of self-concept predicts types of self presentational style on Facebook.

At the end of this study it would appear that individuals may be able to compensate for some aspects of their personalities when self presenting on Facebook, but only to a point: those with higher levels of self-esteem appeared to use more positive language than their low scoring counterparts, which may be typical of their personalities (Baumeister et al., 2003). As research notes, those with low self-esteem are reportedly more negative than those with high self-esteem (Leary & MacDonald, 2003). The studies in the thesis to date support this idea; with suggestion that those with low self-esteem feel less positive during Facebook use (study 1), and that after engagement with specific Facebook tasks individuals low and high self-esteem of various types feel differently after Facebook use - they experience differential mood change (study 2). Presently it was observed that when self presenting via Facebook status updates those with high self-esteem use more positive language. An intriguing question at this point then concerns how does

language use in an idealised environment differ to when individuals present to others characteristics around the actual self, involving a direct comparison, and how does this differ as a function of other self-evaluation variables (self-concept clarity and social comparison tendency)? The next study aims to examine this by comparing the content individuals write about themselves for a social media profile based on who they actually are, and comparing this to a self presentation where these individuals detail who they would ideally like to be and forms part of a two part research phase.

Chapter 6: Phase 4: How do self-evaluation variables influence textual presentation of actual and ideal selves?

6.1 Introduction

The previous study examined online self presentations via Facebook status updates from a linguistic perspective to see how this presentation differed linguistically as a function of self-evaluation variables (self-esteem, self-concept clarity, social comparison tendency). The study also considered the potential for the number of Facebook friends a person has to be used for self presentational purposes (e.g. to display popularity to others). Whilst linguistic differences between groups appeared minimal within the written text, it was especially noteworthy that an individual's level of self-esteem predicted the use of positive language via Facebook status updates. This may suggest that certain linguistic qualities of self presentation are more readily displayed online by some individuals than others, which has implications for impression management. Impression management is an important aspect of interactions with others; in particular since, as several researchers have noted, a major objective when interacting with others involves the management of one's identity and the attempts to control impressions others form (e.g. Schlenker, 1985).

6.1.1 Impression management

Within interactions individuals intend to impart a particular impression onto others, with Goffman's stage and audience metaphor suggesting that individuals want to display an impression that it is in their best

interests to portray, so to display the self which serves them the best advantage (Goffman, 1959). Further, it is suggested that this includes the accentuation of positive self attributes and the reduction or minimisation of self attributes that one perceives as less desirable. In keeping with this, it is noted that only within very inauspicious circumstances would individuals actively attempt to portray an unfavourable self presentation (Leary, 1995). Generally, individuals intend to impress on others the self image that best meets their motivations, dependent on the location and audience, and indeed the social role one is playing out in that moment, permitting the presentation of many different selves (Goffman, 1959). In keeping with this researchers have proposed the existence of different types of selves, including within Higgins' (1987) Self Discrepancy Theory. Within this theory there is reported to be several selves which individuals hold, including the actual, the ideal and the ought. The actual self reflects individuals' perceptions of the self as it is now as perceived by the self and others, whilst the ideal and ought selves act as self guides, that is, to guide the actual self to the qualities required for the ideal (who we want to become) and ought (who we are expected to be) selves. Larger degrees of discrepancies between the actual and these latter self types are associated with a variety of what Higgins calls ''emotional vulnerabilities" (Higgins, 1987, pg. 319). This makes sense when one considers that if individuals would like to present to others the idealised self to elicit a particular impression, then larger discrepancies between the self one believes one actually is and the self one ideally would like to be for example, may make this process more arduous.

Similarly, research into impression management has noted that distinctions can be made between impression motivation and impression construction. Leary and Kowalski's two factor model proposes that individuals may be motivated to impress on others a particular self presentation (for example of the idealised self attributes) but various circumstances might hinder the extent to which the attempts to display this self to others can be made (impression construction). Leary and Kowalski outline a number of factors associated with these processes. Impression motivation is suggested to be the function of three factors: goal relevance of the impression, the value of a desired outcome, and the extent of the discrepancy between current self image and the self one would like to display. It follows therefore that if one does not perceive the impression given to be especially relevant to goal achievement (e.g. if achieving the intended goal is not overly dependent on eliciting a positive impression) then the goal relevance of the impression may be low. In contrast, if the goal relevance of the impression is high then the motivation to achieve a particular impression may be much greater. This links closely to the value of the desired outcome, that is, how important the desired outcome is to the individual. As such it may follow that if the desired outcome is of high value then the impression motivation may be much greater than if the desired outcome is not regarded to be particularly valuable. Also relevant is the extent of the discrepancy between the current self image and the image of the self one would like to portray. If there is a large discrepancy between the actual self image and the image desired to be displayed

then impression motivation (the motivation to deliver a specific impression) may be high but one's ability to display that intended self image may be hindered, which leads forward to the impression construction elements of the model.

The impression construction elements of self presentation, or elements which influence a self presentation attempt, are influenced by five factors according to Leary et al.'s model. These factors include the self-concept, the desired and undesired identity image, role constraints, the values of the target, and current social image. It is apparent that there may be overlap between these elements. A knowledge of the self-concept for example is required to identify the desired and undesired identity image (to identify the desired and undesired identity image an understanding of both the actual self image and how this is perceived is arguably required). Similarly the current social image embodies this aspect, requiring a knowledge of the attributes the self holds. Across these elements individuals require a degree of understanding of the self-concept. This may be challenging for those with low self-concept clarity, as Light (2018) suggests to understand both who one is and who one would ideally like to be or to display, involves clarity of self knowledge. Light (2018) argues that in order to use the current self as a point of reference for the future, clarity of self-concept is part of this self regulation process. As such differences may be anticipated in the way those low and high in self-concept clarity articulate and display different self types in their impression management attempts.

When formulating impression management attempts individuals also require a knowledge of how the self may be perceived by others, and this knowledge may influence the manner of self presentation. Further, an understanding of the values of the target of the impression is important if one wants to match the impression attempted to the values of the person one wishes to impress this image onto. However, role constraints may act to limit an individual; these may for example include one's thoughts and feelings about the self. For example research has suggested that those with low self-esteem have a larger discrepancy between actual and desired self images than those with high self-esteem (Higgins, 1987; Mruk, 2006) and as such self-evaluation variables such as self-esteem may inhibit impression construction attempts, but equally so might the context in which the interaction occurs.

Context is therefore also important when considering impression construction attempts, and whilst it is noted that individuals might attempt to construct self impressions onto others in certain circumstances, they may not display these self attributes in other situations. It may be the case that individuals may be especially able to deliver a desired self presentation to others to elicit the intended impression within online spaces. Whilst online spaces are not homogenous, many online arenas which permit self presentation have several elements in common which can be regarded as affordances. If one considers textual self presentation then several elements may be especially relevant. These affordances, as previously mentioned, include asynchronicity (time), the ability to edit before submitting, and the

increased control over identity cues comparative to offline spaces (Walther, 1996). All of these factors may suggest that within online settings individuals who may find difficulty within traditional face to face offline interactions and the management of impressions imparted to others may benefit. For example in the previous study it was found that those individuals with low levels of self-esteem did not use more negative emotions in their status updates than those with high self-esteem, even though low self-esteem is reportedly associated with a negative emotionality (Leary & MacDonald, 2003). However the ways in which the 'poor get richer' (Poley & Luo, 2012) may not be as simplistic as this. For instance, whilst those with low self-esteem did not differ from their high scoring counterparts in use of negative emotions, they did use less positive emotions in their status updates than high self-esteem individuals. It is likely therefore that the poor may not get richer in a unified and consistent manner and this requires further investigation.

Similarly, previous studies in this thesis have suggested that when engaging with Facebook, whilst individuals might not differ in the extent to which they engage in certain Facebook activities related to impression management (study 1), they may differ in terms of mood during use (study 1), and after use following engagement with specific tasks (study 2). In a linguistic sense in particular, self-esteem appears to be relevant with low and high self-esteem individuals differing in their use of certain types of language (study 3), suggesting that whilst individuals may be motivated to display particular self aspects it may be the case that behavioural residue in their language choice provides information about

the individual, possibly in an unintended way. Other research to date has considered the role of the self-evaluation variables of self-concept clarity, social comparison tendency and self-esteem in a limited way in relation to online behaviour, as previously identified through the literature review. Self-concept clarity as a contributing factor to online behaviour in particular has received minimal research attention, with exceptions including for example the work of Fullwood et al., (2016) and Matsbuba (2006), who observed that those with low levels of self-concept clarity may differ to their high scoring counterparts in terms of the way they self present online.

Fullwood et al., (2016) suggested that low levels of self-concept clarity were associated with a preference for presenting multiple selves in online settings, whilst Matsuba (2006) suggested that those with low levels of self-concept clarity were more likely to use secret screen names and interact with strangers online. Lee (2014) also considered clarity of self-concept and combined the examination of self-concept clarity to self-esteem and tendency to social comparison and suggested that those with high levels of self uncertainty (including low levels of self-concept clarity) were more likely to undertake social comparisons on Facebook. Generally though individuals' tendency to compare to others has not readily been considered as a contributory factor in the way individuals attempt online self presentations, although academics are beginning to consider how conducting social comparisons on social media may impact individuals (e.g. Haferkamp & Kramer, 2011; Chou & Edge, 2012).

Self-esteem has seemingly been the most popular of these self-evaluation variables to receive attention in the academic literature with regards online self presentation attempts. For example self-esteem has been considered in the context of the types of online behaviours individuals may engage with as a function of this self-evaluation variable (e.g. Zywica & Danowski, 2008; Tazghini & Siedlecki, 2013; as well as the first study in this thesis). It would appear however that the linguistic qualities of individuals' textual self presentations have received minimal attention, even though textual language use is suggested to reveal personality cues (Pennebaker & King, 1999). A notable exception is the work of Schwartz et al., (2103) who noted that the linguistic qualities of textual self presentations may differ as a function of personality in Facebook profiles (Schwartz et al., 2013). It is logical and insightful therefore to continue textual analyses in such domains. These considerations of self-evaluation variables in online self presentation have been limited therefore and largely not in relation to linguistic content, or indeed how linguistic content might differ dependent on whether the actual or ideal self is presented. This is despite the fact that individuals' feelings around the self inform their language (Pennebaker & King, 1999), behaviour and interactions with others (Leary, 2004) and that online self presentations may permit an increase in the ability to present a desired self to others in some online environments (Walther et al., 1996).

6.1.2 The current study

The previous study provided preliminary insights into how such textual self presentations may differ as a function of the self-evaluation variables of the author (i.e. if individual differences in levels of self-esteem, clarity of self-concept and tendency to compare to others manifest themselves as differences in such self presentations).

The present study therefore aims to examine language use as a textual method of self describing in more detail, to compare linguistic qualities individuals use to describe their ideal self to their actual self as a function of self-evaluation variables. The study intends to ascertain if attempts in impression construction differ between actual and ideal selves and if individual differences in self-evaluation variables manifest themselves through language, as well as considering implications this may hold for interactions with others in the next phase of the research. Individuals will be requested to complete measures of self-esteem, self-concept clarity and social comparison tendency via accessing the study URL.

Individuals will then receive written instructions to write an 'about me' profile as though for a social media site of their choosing. They will write two profiles. For the first profile, participants will receive instructions to describe the self for this profile based on the attributes of their 'actual self'. That is, the self as they currently are and believe they are perceived to be by others. Next, participants will receive instructions to write a second profile, again for a social media site of their choosing, this time outlining for others their 'ideal self'. That is, outlining the self they would

ideally like to be and how they would like to be perceived by others. These self presentations will be compared and analysed as a function of self-evaluation variables. Due to the dearth of research to inform specific research hypotheses and to enable the exploratory stance of the research the study employs a research question:

How will individual differences in self-esteem, social comparison tendency and self-concept clarity manifest the textual self presentations of the actual and ideal self?

6.2 Method

6.2.1 Design

This study used a between subjects design. Independent variables were self-esteem with two levels obtained via median split (low and high), self-concept clarity (low and high), and social comparison tendency (low and high). The dependent variable was the Anxiety difference score; Positive emotions difference score; and Word count difference score. These were computed by subtracting the percentage word use in the actual self presentation from the percentage word use in the ideal self presentation (e.g. positive emotion score in ideal self presentation minus positive emotions score in actual self presentation).

6.2.2 Participants

Power analysis for independent samples t test was conducted in G*Power to determine a sufficient sample size using an alpha of 0.05, a power of 0.80, and a medium effect size (0.5) Based on the aforementioned

assumptions, the desired sample size was 128 participants, or 64 in each group. Data collection attained an opportunity sample of 129 participants (100 female and 29 male) primarily from a large U.K. University, the majority of which were recruited from the Psychology Students Participant Pool at the University and received course credit for participation. The remainder of participants were either students from other courses within the University or individuals obtained via a snowball sampling method. The mean age was 26.32 years (SD 9.24) with ages ranging from 18 to 62 years of age.

6.2.3 Materials

6.2.3.1 Demographic information

Age and gender was provided by participants who then completed a series of self-evaluation questionnaires.

6.2.3.2 The Iowa-Netherlands Comparison Orientation Scale (INCOM) (Gibbons & Buunk, 1999). See Appendix 10.1.1.1

Please refer to section 3.3.3 for details. The Cronbach Alpha for the scale use in this study was .83.

6.2.3.3 The Rosenberg self-esteem scale (Rosenberg 1965). See Appendix 10.1.1.2

Please refer to section 3.3.4 for details. The Cronbach Alpha for the scale use in this study was .92.

6.2.3.4 The self-concept clarity scale (Campbell et al. 1996). See Appendix 10.1.1.3

Please refer to section 3.3.5 for details. In the current study a Cronbach Alpha of .89 is reported.

Instructions were given to participants requesting they write two profiles about themselves for an online social media site of their choosing. Participants were requested to write the first one 'as they are right now' (actual self profile) and a second as they 'would like to be' (ideal self profile). Participants wrote these profiles electronically, accessing the survey in its entirety via an online survey website. It was originally intended that participants would be requested to write between 250 and 500 words for each profile. However, the survey software did not compute word counts, instead favouring character counts. Estimations for the number of characters required for 250-500 words were estimated and inputted as minimum requirements before the survey would proceed to the next section. However due to problems with participants misreading the character count for word count this was later removed from the survey requirements.

These profiles were subsequently analysed using Language Inquiry and Word Count (LIWC) software (Pennebaker, Francis & Booth, 2007), as outlined in Chapter 5 section 5.1.6 (pp.193).

6.3 Procedure

Participants accessed the URL for the study and viewed online Information sheets outlining study details and participant requirements. Informed consent was obtained and participants completed the above measures. Participants then received instructions to write an 'about me' profile for a social media website of their choosing about the person they are 'right now' (the actual self profile).

Next participants were asked to write an 'about me' profile for a social media website of their choosing about the person they 'would like to be' (the ideal self profile). It would be remiss however to suggest that individuals would always like to display an idealised version of the self on social networking sites. For example, Back et al., (2010) in their analysis of Facebook profiles concluded that self presentation via the Facebook profile reflects the actual self and not self idealisation. As such it is noted that individuals may not always present an idealised self online, however, occasions exist where they do. Manago et al., (2008) in their social media study suggested that expressions of an idealised self are often displayed, and similarly exaggerated versions of the true self are reportedly displayed on social networking sites according to Zhao et al., (2008). As such whilst individuals may not always choose to present an idealised self image online, it may be the case that individuals choose to present a self which is most suited to the audience and online setting, and this may include an ideal self.

The task of writing these profiles was not time constrained; individuals were able to take as long as they needed to write these profiles. These profiles did however have a maximum and minimum word count associated with them, outlined in the instructions. If participants did not use sufficient words in their self description a reminder was issued before the study could continue. There were some issues identified with this process, which are discussed above.

Examples of the about me profiles that were analysed within the fourth study can be found in Appendix 10.4.1. A debrief page was then displayed and the study was complete.

Scores for social comparison tendency, self-esteem and self-concept clarity were computed into total scores as per guidelines issued by the scale authors. These were then computed into median split scores.

The actual and ideal self profiles provided by participants were analysed using the Linguistic Inquiry and Word Count (LIWC) software (Pennebaker, Francis & Booth, 2007). As such each participant's actual and ideal profile had now been analysed into output variables as percentage of the total words within the sample (Pennebaker et al., 2001). An example of the output for this process is detailed in Appendix 10.4.2. Difference scores were computed by subtracting the percentage word use in the actual self presentation from the percentage word use in the ideal self presentation (e.g. positive emotion score in ideal self presentation minus positive emotions score in actual self presentation). A positive difference score meant more positive emotions in the ideal

than in the actual self-presentation; a negative score meant more positive emotion in the actual than in the ideal self-presentation. An example of the output for this process is detailed in Appendix 10.4.2

6.4 Results

6.4.1 *t* tests assessing differences in language in actual and ideal self presentations as a function of self-evaluation variables.

Difference scores for language use and word count did not represent a normal distribution (means and standard deviations for difference scores and self-evaluation variables displayed in Tables 17 and 18). Due to the non-normality of the distribution, *t* tests with Bias Corrected and accelerated confidence intervals (BCa) applied were employed based on 1000 bootstrap samples. SPSS output for these analyses is available in Appendix 10.4.3

Table 17: *Descriptive statistics for self-evaluation variables, standard deviations in parentheses.*

Variable	Mean (*SD*)
Self-esteem score	19.36 (5.98)
Self-concept clarity score	38.24 (9.13)
Social comparison tendency score	36.82 (6.73)

Table 18: *Descriptive statistics for difference scores, standard deviations in parentheses.*

Variable	Mean (*SD*)
Anxiety difference score	-0.18 (0.68)
Positive emotions difference score	1.65 (7.85)
Word count difference score	-27.40 (64.20)

Self-evaluation median split scores were entered as independent variables (e.g. self-esteem median split scores) and dependent variable being the difference score for language use (e.g. positive emotions difference score). This would enable analysis of both the direction of the effect for low and high scorers in self-evaluation (e.g. if low and high scorers increased their use of positive emotions when idealising the self) and the magnitude of this effect (if high and low scorers differed significantly in the difference between actual and ideal self presentations).

6.4.2 Self-esteem and anxiety words used within actual and ideal self presentations

Both low and high self-esteem individuals used more anxiety words in the actual self presentation than the ideal self presentation on average, as denoted by a negative difference score (Low self-esteem anxiety difference *M* -0.30; *SE* 0.10; High self-esteem *M*: -0.06 *SE*: 0.06).

The mean difference (-0.24 BCa 95% CI: -0.46; -0.02) was marginally significant t (127) = -2.01, p = <0.05. Those with low self-esteem had a greater discrepancy between the actual and ideal self presentations than high self-esteem individuals, therefore those with low self-esteem reduced the use of anxiety significantly more than those with high self-esteem in the ideal self presentation.

6.4.3 Self-concept clarity and positive emotions within actual and ideal self presentations.

Both those low and high in self-concept clarity used a larger percentage of positive emotions in the ideal self presentation denoted by positive difference scores. Those with low levels of self-concept clarity appeared to have a larger difference score on average (Low self-concept clarity positive emotions difference score *M*: 3.14; *SE* 1.25) than high scorers (*M*: 0.32; *SE* 0.65). This mean difference (2.82; BCa 95% CI: 0.40; 5.59) was significant t (91.05) = 2.00, p = <0.05.

Those with low self-concept clarity had the largest discrepancy score between the actual and ideal self presentations, as such those with low levels of self-concept clarity increased the use of positive emotions when describing the ideal self to a greater degree than those with a clearer self-concept.

6.4.4 Social comparison tendency and differences in word counts across actual and ideal self presentations

Both those who compared to others frequently (high social comparison tendency) and those who compared less frequently (low social comparison tendency) used more words in the actual self presentation than the ideal self presentation, denoted by a negative difference score (high scorers word count difference score *M*: -10.51; *SE* :4.51; low scorers *M*: -43.52; *SE:* 9.81).

The mean difference between those low and high in social comparison tendency was significant, t (91.11) = -3.06, p = <0.05, with those who compared less often to others having the largest word count difference between the actual and ideal self presentations, (mean difference: -33.01 BCa 95% CI: -54.90; -13.18). As such those with a low social comparison tendency used a greater number of words in the actual self presentation compared to the ideal self presentation than those with a high social comparison tendency.

6.4.5 Results summary

Low self-esteem individuals decreased the use of anxious language when idealising the self, whilst low self-concept clarity individuals increased their use of positive emotions significantly more than the higher scorers when the ideal self was portrayed. Those with low levels of social comparison tendency used a larger number of words in the actual self presentation than the ideal self presentation and this difference was

significantly greater than the difference for those who compare to others more frequently.

6.5 Discussion

The results suggested that individual differences variables (social comparison tendency, self-esteem and self-concept clarity) related to differences in the ways individuals textually presented actual and ideal selves, in several interesting ways. Discussion will now take place outlining findings for each self-evaluation variable and considering the implications this may hold for online interactions with others. The follow up study will then be introduced.

6.5.1 Social comparison tendency effects

Both those who compared frequently to others, and those who conducted fewer social comparisons used more words to describe the actual self than the ideal self, but for those with a low social comparison tendency the discrepancy effect was most pronounced. That is, those who had a low tendency to compare to others had the largest discrepancy between the number of words in the actual self presentation and the ideal self presentation. This may suggest that generally the actual self is more easily articulated than the ideal self, reflected in the greater word count. A low tendency to compare to other people according to the scale authors reportedly manifests itself as not being particularly pro-socially orientated, generally being less interested in the self in relation to others, and less concerned with what others think compared to those who have a high tendency to social comparison

(Gibbons & Buunk 1999). These individuals who do not compare frequently then may be less preoccupied with how they may be perceived by others and how they compare to others to the extent that they are much more able to describe the actual self to others, expressed as a larger word count. This may suggest that the tendency one has to compare to others may influence how comfortable one is with describing self attributes to others via a textual self presentation. The self-evaluation variables of self-esteem and self-concept clarity also revealed differences in self presentation attempts which will be discussed next.

6.5.2 Self-esteem and self-concept clarity effects

The results suggested that those with low self-esteem were able to reduce the amount of anxiety in their self presentation when describing the ideal self compared to the actual self, whilst those with low levels of self-concept clarity were able to use more positive emotions when describing the ideal self than the actual self. Whilst high scorers both decreased and increased anxiety and positive emotions respectively when describing the ideal self, the effect was most pronounced for the low scorers. It may be the case therefore when granted the opportunity to idealise a self presentation (e.g. in certain online environments) there may be a particular advantage for those with low self-esteem and low self-concept clarity. In online environments where there is increased flexibility over self presentation, where for example asynchronous communication methods pervade or where textual self presentation is common, or where deviations from the actual self are more available,

with increased control over identity cues such individuals may be able to present an idealised self which is more positive, less anxious than the actual self, especially amongst those who are typically defined as the poor in the poor get richer hypotheses. This would suggest that from a perspective of the amount of anxiety and negativity within a textual self presentation, when opportunities are granted to idealise the self a self presentation may be more positive and less anxious, as such in certain online environments the poor may get richer (Poley & Luo, 2012).

There are a number of implications to be considered here. Low self-esteem is reportedly associated with a preference to interact online rather than face to face (Joinson, 2004) and a fear of social rejection from others (Leary & Downs, 1995). If individuals are able to present a self to others which is idealised they may then be able to overcome some of the barriers associated with this fear of rejection with others and self present in a less anxious way. Those with low self-concept clarity also reportedly prefer to communicate online than face to face, with recent research suggesting that those with low self-concept clarity are less likely to want to present a self online which is consistent with their offline self (Fullwood et al., 2016). When such individuals are granted increased flexibility of self presentation in online settings then, it may be the case that these individuals may be able to present a more positive self than the actual self.

6.5.3 Strengths, limitations and future research.

This study provides a unique contribution to the research field: self-evaluation variables are rarely considered in combination with regards how individuals attempt to self present as a function of these variables in online settings (although personality has been considered e.g. Schwartz et al., 2013). In addition to building on and further developing previous work, this study holds a particular benefit with regards social desirability. Social desirability - desirable responding in the presence of an experimenter (Krumpal, 2013) is reportedly reduced in online surveying comparative to face to face (Tourangeau, Conrad & Couper, 2013). It may be suggested therefore that participants may have provided a more accurate picture of both the actual and ideal selves than in alternative experimental settings. Subsequently this methodology also provided a more ecologically valid form of constructing of an about me profile, as participants completed these about me profiles over the Internet.

Limitations should be noted. Participants were limited in their self presentations to the use of words, however, individuals also tend to use pictures and videos too in order to self present on social media (Bartsch & Subrahmanyam, 2015). However, as previous research has highlighted textual and pictorial self presentations may be differentially perceived during impression formation (Van der Heide, et al., 2012) and so considering textual self presentations alone is both feasible and appropriate given the dearth of research into this combination of self-evaluation variables in this context. However, this does highlight the

need for research to consider other self presentation methods (such as use of images or images and text) within the context of the self-evaluation variables of these individuals.

A larger sample size would have permitted a more complex analysis. Research suggests that use of open questions increases the likelihood of attrition in surveys (Crawford, Couper and Lamias, 2001) however within the current survey this type of question was the crux of the research interest (devising a text based actual and ideal self profile). Equally however there is suggestion that sustaining interest during the course of the survey decreases the amount of attrition observed (Knapp & Heidingsfelder, 2001) and arguably describing the self may be perceived as more interesting to participants than survey questions of other natures.

A particular limitation with potential contribution to participant attrition involves the specifics of the survey software available at the time of study compilation and data collection. At this time available software was only able to place restrictions around character counts in responses (e.g. to provide parameters for a maximum and minimum character count in response to the about me questions). However this character count request appeared to confuse some participants and subsequently this restriction was removed. As software becomes more advanced it may be possible to employ a word count restriction parameter (e.g. specifying a request to type between 200 and 250 words) rather than character count

and this may lead to increased participant retention during the survey process.

It is also acknowledged that inclusion of a control group within this study would have been beneficial. A control group is included within experiments to ascertain how individuals may behave in the absence of the experimental condition, providing a baseline for comparison (Peck & Devore, 2011). In this instance it may have been insightful to form a control group whereby participants were asked to write about someone else, in order to illustrate language used is reflective of a self description. However, despite these limitations, revealing information about how self evaluation variables may influence the manner of textually describing different self types has been observed. It is notable however that individuals self presentations to others, their impression management attempts, do not occur in isolation from others. The impressions others form of these individuals may act to inform subsequent interactions (Jones et al., 1968). As such there is a need now to consider how these self presentations are perceived by others. A second study was devised to consider this question. Within this study a selection of the actual and ideal self presentations individuals had written in the current study were taken and presented to a series of raters. Raters read an actual and ideal self profile (in counterbalanced order) and provided information on the impressions they had formed of the profile holders. These impressions formed were analysed as a function of the self-esteem, clarity of self-concept and social comparison tendency of

the profile holder and considering whether an actual or ideal self was presented.

Chapter 7. How do profile holder's self evaluation variables influence the impressions others form of their actual and idealised selves?

7.1 Introduction

The previous study highlighted the idea that individuals may present the self differently as a function of their self-evaluation variables and dependent on whether an actual or ideal self is described, and introduced the notion that such self presentations far from occurring in isolation may hold implications for the impressions others form of these individuals. First impressions of others are quickly made (Willis & Todorov, 2006) and often used in the interpretation of future behaviours involving that individual (Jones et al., 1968). Two underlying dimensions reportedly inform such social judgements (Wojciszke, 1994). The first encompasses traits such as competence, efficiency and persistence and their opposites, often called agency (Cislak & Wojciszke, 2008). Whilst the second encompasses traits such as co-operation, trustworthiness, warmth and helpfulness and their opposites on the other end of the spectrum and can be referred to as communion (Cislak & Wojciszke, 2008). These dimensions can be used in perceptions of social groups, individual others and the self (Abele & Wojciszke, 2014). Indeed it is notable that the same actions can be interpreted differently by the actor and the observer (Abele, & Wojciszke, 2014). In keeping with this offline evidence into impression formation suggests that whilst those with high self-esteem for

example, often perceive themselves to be rated as more popular and well liked at first impression than others, they might not generally be differentially perceived in communal and agentic realms to their low self-esteem counterparts (cf Baumeister et al., 2002).

Regardless of the actual impressions others form of an individual the perception the individual holds of others opinions of them (their metaperceptions) are likely to inform interactions. This may therefore partially explain why those with low self-esteem have a protective self presentational style (Rosenberg and Owens, 2001) and as such individuals such as those with low self-esteem might especially prefer to interact in environments where they have more control over the interaction and opportunity to accentuate attempts at impression management, for example In certain online environments where idealisation of self presentation is increased comparative to face to face settings. Indeed research suggests that those with low self-esteem may prefer online interactions. For example Joinson (2004) found that those with low self-esteem compared to their high scoring counterparts expressed a higher preference for email communication compared to face to face interaction, whilst Forest and Wood 2012 (study 1) suggested that those with low self-esteem stated they were more likely to disclose thoughts and feelings via Facebook than face to face. Similarly, the limited research into self-concept clarity offers support for the notion that those with low levels of self-concept clarity may prefer interaction via online environments compared to face to face (e.g. Matsuba, 2006,

Fullwood et al., 2016), as such then there are implications for impression management and subsequent impressions formed.

7.1.1 Previous research into impression formation

An interesting question therefore is how does the impression formed of an individual online differ from an offline impression? Research suggests that there may be some similarities and some differences. For example Weisbuch, Ivcevic, and Ambady (2009) examined perceptions of liking after engagement in a dyadic interaction and after viewing of an individual's Facebook profile, in particular in relation to social expressivity (defined as portraying a sociable and interactive style of engagement) and self disclosure both in online and offline contexts. It was suggested that there were some similarities in the way people presented online and offline (levels of social expressiveness and self disclosure online were correlated positively with offline equivalents) and further perceptions of liking in both settings were positively correlated. Similarly in both offline and online relationships it was suggested that some information is not used to inform liking at first impression (self disclosing). It was reported that social expressivity correlated with liking offline and online whilst the manner of self disclosure on webpages did not correlate with social expressivity offline, nor did manner of social expressivity online correlate to verbal self disclosure (offline). This research may therefore suggest that there may be similarities in the way people present the self and subsequent levels of liking both online and offline with social expressivity being important in both contexts, however notably that social

expressivity in online settings does not correlate to verbal self disclosure (in face to face settings). This may therefore hold interesting implications for those who are wary of face to face self disclosure who may therefore find it easier to employ social expressivity online, and as such individual differences variables appear a logical point of investigation for online impression management.

Following this line of thought research has also considered how impressions formed online might differ as a function of the personality of the individual undertaking the impression management attempt. Van der Heide, D'Angelo and Schumaker (2012) examined textual and pictorial self presentations and the social orientation judgements (level of extraversion) others formed of them. Findings suggested that if raters viewed a picture of an extroverted person and text written by an extroverted individual the perceptions of social orientation (level of extraversion) did not differ between these two presentation modes, suggesting that individuals receive similar impressions whether presenting in pictorial or textual form in terms of extraversion. However text written by an introverted individual was perceived as more introverted than introverted images (in this instance their impression did differ as a function of presentation mode). This initially suggested therefore that viewing text written by an introverted individual led to an impression of greater introversion than an image of an introverted person does. However when these two presentation modes were combined - text and images - an image of an introverted individual combined with extroverted textual presentation was rated as less extroverted than when

introverted textual content was combined with an extraverted photo. This time therefore if raters were presented with an image of an introvert but accompanied by extroverted text these people were rated as more introverted than when introverted text was accompanied by an extraverted photo. It would appear then that the interplay between textual and visual information in impression formation may be quite complex, however it should also be noted that individuals may be judged at first impression in domains other than introversion and extraversion.

Stopfer, Egloff, Nestler and Back, (2013) examined a range of personality traits and considered the impressions formed of individuals on the basis of their social networking profiles. When raters viewed the entirety of the social networking profile in order to form a judgement it was suggested that high scorers on communion or openness to experience received high levels of sociometric popularity (were liked). Interestingly individuals who held high levels of agentic traits were perceived as having high levels of peer perceived popularity, (perceived as being well accepted within a social circuit) although they were not necessarily liked (they did not receive high levels of sociometric popularity). It was suggested that certain behavioural cues mediated the relationship between agentic traits and perceptions of status – highly agentic profile holders had more posts from their friends of the opposite sex, and it appeared that raters used this information in their ascribing of status when they formed personality impressions. The link between creativity and liking was mediated by the use of more inventive social networking profiles which was used by raters to inform judgements of liking, whilst the link between liking and

communal traits was not explained by any of the cues examined. When individuals were given smaller pieces of information in which to make judgements (profile picture) rather than the whole profile, status was predicted by agentic traits as in the whole profile analysis, however creativity or communion did not influence judgements of liking. This study therefore highlights the idea that perceptions formed of others at zero acquaintance (previously unknown) can differ as a function of personality variables, and, that when viewing an entire profile a range of information is used to inform judgements, whilst when viewing a picture of an individual certain personality characteristics may continue to be used in impression formation.

Primarily impression formation in online settings has been considered in the context of personality variables however some have considered the role of self-evaluation variables in the form of self-esteem. for example a comprehensive study by Stopfer, Egloff, Nestler and Back, (2014) analysed personality and various self-esteem aspects to examine the accuracy of impressions formed of others on social networking websites, the effectiveness of impression management and how accurate individuals were in perceiving the impressions others formed of them (their metaperceptions). Profile holders provided information on their self views (completing a personality assessment, measures about how they felt they were perceived, and what their intended impression was). Raters were required to form judgements of these profile holders either after viewing specific aspects of the profile (including textual and visual elements) and self presentational cues (e.g. attractiveness) or by viewing

the entire profile. Findings included suggestion that individuals can accurately detect individual difference variables (personality dimensions and certain self-esteem aspects) in online social networking self presentations, especially via profile pictures, although appearance self-esteem was accurately judged on text based self presentation (groups list for example). There was suggestion that textual information about the self (interests) to express personality permitted more successful impression management (communicating the intended impression to others) than when judgements of the profile holder were based on pictures. Metaperceptions (individuals' perceptions of the impressions others formed of them) tended to be accurate, in fact often more accurate than the personality impressions others had formed of them.

The findings of Stopfer et al., (2014) in particular highlight the need to look at other self-evaluation variables and their role in impression formation: -If individuals can accurately detect aspects of another's personality in online settings and form impressions based on these how will impressions formed differ as a function of other individual differences variables of the profile holder, some of which are reportedly important in both self-evaluation and interactions with others? This is further emphasised when looking to the findings of Forest and Wood (2012) in a notable study they observed that the impressions formed based on Facebook updates at zero acquaintance suggested that those with high self-esteem were rated as more likeable than those with low self-esteem. It would appear therefore that whilst research into impression formation in online settings has considered the different impressions that may be

formed as a function of presentation mode (online versus offline) and amount of information portrayed in online settings (profile picture versus entire profile, picture versus text) the research has largely focused on personality or self-esteem in relation to impression formation. However other self-evaluation variables may be of value but have seemingly not yet been considered in this context.

7.1.2 The current study

Low levels of self-concept clarity are reportedly associated with ruminative self focused attention (Showers & Zeigler-Hill, 2012) which may impact on self presentational style and subsequently impression formation. The previous study in this thesis demonstrated that when idealising, these individuals were able to increase the use of positive emotions compared to portrayal of the actual self. Therefore, considering impression formation as a result of such presentations is a clear next step, with implications for interactions in online settings. However a review of the literature suggests that research into impressions formed in online settings as a function of a profile holder's self-concept clarity has not been considered. Further, research into the influence of an individual's self-esteem on the impressions others form requires more detailed examination.

The previous study suggested that those with low self-esteem can decrease the use of anxious language when idealising the self compared to presenting the actual self which also holds clear implications for impression management in online settings and subsequently therefore

impression formation. As such whilst previous research has considered the role self-esteem may play in online impression formation a more detailed study is required. With regards social comparison tendency research has begun to consider how engagement with social networking websites may adversely impact emotionally those with high levels of social comparison tendency, (e.g. Haferkamp & Kramer, 2011 and study 2 of this thesis;) but impression formation as a function of the social comparison tendency of the profile holder does not appear to have been explored. The previous study in this thesis suggests this may be a fruitful course of research consideration and permits tentative suggestion that those with a low level of social comparison tendency may be less concerned with the way they are perceived by others when describing the actual self than those who compare frequently. The role of a profile holder's social comparison tendency in impression formation is one therefore that requires more detailed consideration and analysis.

The current study aims to fill this void by contemplating the role of self-evaluation variables in combination, in a way previous study appears not to have considered with regards impression formation. The study will further extend previous work, considering how impressions formed of individuals might differ as a function of these self-evaluation variables and dependent on presentation type (actual and ideal selves). This will be considered by comparing impressions formed of others based on actual self presentations with idealised ones as a function of the self-esteem, self-concept clarity and social comparison tendency of the profile holder on which the impression is formed. In order to permit thorough

contemplation of the ways these self-evaluation variables may influence impression formation as a result of viewing actual and idealised self presentations a research question is posed.

Research question: how will agentic and communal impressions of individuals differ dependent on whether an actual or ideal self is presented and as a function of the self-evaluation attributes of the profile holder?

7.2 Method

7.2.1 Design

A repeated-measures design was used, with the independent variables being the the self evaluation variables of the about me profile author: self-esteem with two levels obtained via median split (low and high), self-concept clarity (low and high), and social comparison tendency (low and high). The dependent variable was the impression formed, whereby each participant viewed one actual self profile and one ideal self profile, and rated the profile holder they had read about in both agentic and communal domains. Counterbalancing took place whereby half the participants viewed an actual self profile first and rated it, followed by an ideal self profile and rated it, and the remainder viewed an ideal self profile and rated it, before repeating the process with an actual self profile.

7.2.2 Participants

Power analysis for independent samples t test was conducted in G*Power to determine a sufficient sample size using an alpha of 0.05, a power of 0.80, and a medium effect size (0.5) Based on the aforementioned assumptions, the desired sample size was 128 participants, or 64 in each group. Data collection attained 150 individuals primarily from a large West Midlands university, the majority of which were recruited from the Psychology Students Participant Pool at the University and received course credit for participation. The remainder of participants were either students from other courses within the University or other individuals obtained via a snowball sampling method. Of this total 115 were female, 31 were male, remainder undisclosed. 144 participants provided information about age; the mean age was 24.19 years (*SD* 9.15) ranging between 18 and 63 years of age.

7.2.3 Materials

7.2.3.1 Demographic information

Age and gender was provided by participants who then viewed an 'about me' profile written by another individual.

7.2.3.2 Actual and ideal self profiles.

Participants viewed an actual self profile and ideal self profile in counterbalanced order, written by individuals in the previous study. The actual self profile held a description of a profile holder as they actually

were, whilst the ideal self profile detailed a profile holder as they would ideally like to be. These profiles were selected from the available profiles at the time of study compilation. From these 31 profiles were selected 71% of which were female and the remainder male. Profiles ranged from 251 and 338 words in the actual self presentations, (*M*: 286.52 *SD*: 27.91) and 250 and 435 words in the ideal self presentations (*M*: 280.35; *SD*: 40.15;) representing a range of self-evaluation variable scores (detailed in Table 20). The self-esteem score (Rosenberg 1965), social comparison tendency score (Gibbons & Buunk, 1999) and self-concept clarity score (Campbell et al; 1996) of each profile holder had been obtained in a previous study (and computed as per scale author guidelines) and retained for analysis within the current study.

7.2.3.3 Scale of agentic and communal impressions (Buffardi & Campbell, 2008). See Appendix 10.5 .1

Participants completed a scale of agentic and communal impressions, (Buffardi & Campbell, 2008) which assessed the impressions they had formed of the profile holders. The communal and agentic sections of the scale are formed of a series of adjectives in which participants rate the extent to which they agree that the adjectives adequately describe the profile owner on a scale of 1-7, where 1 is 'not at all' and 7 is 'very much'. Some items are reverse scored. Sample adjectives for communal impressions include 'cooperative', 'friendly', 'generous' and 'likeable'. The agentic impression ratings include adjectives such as 'assertive', 'active', and 'confident', also on a seven point scale.

7.2.4 Procedure

Information sheets outlining study details and participant requirements were administered to participants. Informed consent was obtained and participants were requested to provide demographic information. Participants then viewed an about me profile written by another individual and rated this profile on agentic and communal impressions they had formed of the profile holders. This process was repeated with a second about me profile. All participants viewed a profile written by another individual as they actually are (actual self profile) and a profile written by another individual about who they would like to be (ideal self profile). These were presented in counterbalanced order. On completion of this, participants were debriefed and dismissed.

A composite of the agentic impression ratings formed of the profile owners was created by taking the mean of the impressions for assertive, active, boring (reversed), confident, dominant, energetic, entertaining, enthusiastic, high in status, important, inhibited (reversed), intelligent, outspoken, quiet (reversed), reserved (reversed), silent (reversed), withdrawn (reversed), and submissive (reversed) as described by Buffardi and Campbell, (2008) and called 'Agentic Impression'. A composite of the communal impression ratings formed of the profile owners was created by taking the mean of the impressions for affectionate, cooperative, cruel (reversed), friendly, generous, grouchy (reversed), hostile (reversed), kind, likeable, mean (reversed), pleasant, quarrelsome (reversed), rude (reversed), stingy (reversed), and warm as

described by Buffardi and Campbell, (2008), and called 'Communal Impression'. Therefore each participant now had an agentic impression score for the Ideal and Actual self profile they had viewed, and a communal impression score for the Ideal and Actual self profile they had viewed.

7.3 Results.

Analyses were conducted to assess the extent to which agentic and communal impressions of the profile holder differed as a function of self-evaluation variables of the profile holder and how this may differ between presentation modes (actual and ideal self presentation). Normal distribution was broadly approximated for each of the impression scores (agentic impressions of actual self; agentic impressions of ideal self, communal impressions of actual self, communal impressions of ideal self). Descriptive statistics for agentic and communal impressions within actual and ideal self presentations are detailed in Table 19. Additionally information regarding the self-evaluation variables held by profile owners (profile owners' levels of self-esteem, self-concept clarity and social comparison tendency) are detailed in Table 20.

Table 19*: Descriptive statistics for agentic and communal impressions formed from actual and ideal self presentations; standard deviations (SD) in parentheses.*

Presentation type	Variable	*M* (*SD*)
Actual	Agentic impression score	4.25 (0.93)
	Communal impression score	5.04 (0.91)
Ideal	Agentic impression score	4.84 (0.93)
	Communal impression score	5.09 (0.97)

M: Mean

Table 20. *Descriptive statistics for the self-evaluation variables of profile holders with standard deviations (SD) in parentheses*

	M (*SD*)	Min	Max
Self-esteem score	17.94 (6.74)	7.00	30.00
Self-concept clarity score	37.13 (9.55)	19.00	58.00
Social comparison tendency score	38.52 (7.52)	14.00	51.00

M: Mean; Min: Minimum; Max: Maximum

7.3.1 *t* tests assessing differences in communal and agentic impressions in actual and ideal self presentations as a function of the profile holder's self-evaluation variables.

In order to examine the differences in impressions garnered across actual and ideal self presentations as a function of self-evaluation variables, a series of *t* tests were conducted. Self-evaluation median split scores were entered as independent variables (e.g. self-esteem median split scores) with the dependent variable being the impression score (e.g. agentic impressions within the actual self presentation). This process was repeated for each self-evaluation variable (self-esteem, social comparison tendency and self-concept clarity) and each type of self presentation (actual or ideal) and type of impression (agentic or communal). Results are outlined below with significant effects reported in the text and non-significant effects reported in tables. SPSS output from all of these analyses is available in Appendix 10.5 .2.

7.3.2 Profile holder's self-esteem and agentic and communal impressions formed of actual and ideal self presentations

Those with high levels of self-esteem were rated as more agentic (*M*: 4.44 *SE*: 0.10) than those with low self-esteem (*M*: 4.01 *SE*: 0.11) when raters viewed these individuals' actual self presentations. This mean difference (Mean difference: -0.43; 95% CI : -0.72; -0.13) represented a significant effect: *t* (148)= -2.86, *p* = <0.05. However those low and high in self-esteem did not differ in the communal impressions formed of them when presenting the actual self (Table 21). When raters viewed the idealised self presentations of those with high self-esteem they rated these individuals as significantly more

agentic (*M*: 5.01; *SE*: 0.09) than those with low self-esteem (*M*: 4.65; *SE*: 0.12) *t* (148)= -2.33; *p* =<0.05. These high self-esteem individuals were also rated as more communal (*M*: 5.23; *SE*: 0.10) than those with low self-esteem (*M*:4.92; *SE*: 0.12) when their idealised self presentation was viewed *t* (148)= -2.01; *p* =<0.05 .

Table 21: *T test statistics for the non significant effects of self-esteem on communal impressions formed of the actual self presentation. Standard errors (SE) and 95% confidence intervals are displayed in parentheses.*

Condition	Variable	*M* low self-esteem (SE)	*M* high self-esteem (SE)	*M* difference (95% CI)	*t* df	*p*
Actual self presentation	Communal impression score	4.96 (0.10)	5.10 (0.11)	-0.14 (-0.44; 0.15)	-0.95 148	0.34

M: Mean. df: Degrees of freedom.

7.3.3 Profile holder's tendency to compare to others and agentic and communal impressions formed of actual and ideal self presentations

Those with high levels of social comparison tendency were perceived as more communal when impressions were formed based on the ideal self presentation (*M*: 5.24; *SE*: 0.11) than those with low levels of social comparison tendency when they idealised a self presentation (*M*:4.90; *SE*: 0.11). The mean difference between these scores (mean difference: -0.34; 95% CI: -0.65; -0.03) represented a significant effect: *t* (148)= -2.20; *p* = <0.05. However those low and high in tendency to compare to others did not receive

significantly different agentic impressions when idealising (see Table 22). Further when presenting the actual self those low and high in social comparison tendency did not differ in how agentic or communal they were perceived to be (Table 22).

Table 22*: t test statistics for the non significant effects of social comparison tendency (SCT) on impressions formed of the profile holder in actual and ideal self presentations. Standard errors (SE) and 95% confidence intervals are displayed in parentheses.*

Condition	Variable	*M* low SCT (SE)	*M* high SCT (SE)	*M* difference (95% CI)	*t* df	*p*
Actual self presentation	Agentic	4.31 (0.12)	4.18 (0.10)	0.13 (-0.17; 0.43)	0.85 148	0.40
	Communal	5.11 (0.11)	4.97(0.11)	0.14 (-0.16; 0.43)	0.93 148	0.35
Ideal self presentation	Agentic	4.85 (0.11)	4.84 (0.11)	0.01 (-0.29; 0.31)	0.07 148	0.95

M: Mean. df: Degrees of freedom.

7.3.4 Profile holder's self-concept clarity and agentic and communal impressions formed of actual and ideal self presentations

Those with high levels of self-concept clarity were rated as more agentic (*M*: 5.13; *SE*: 0.10) than those with lower levels of self-concept clarity (*M*:4.58; *SE*: 0.11) when raters viewed their idealised self presentations (mean difference: -0.55; 95% CI: -0.84; -0.26) t (148)= -3.79; p = <0.05. These

high scoring individuals were also rated as more communal when idealising the self (*M*: 5.28; *SE*: 0.09) than those with a less clear self-concept (*M*: 4.91; *SE*: 0.12) *t* (143.11)= -2.39; *p* = <0.05. However raters' impressions of those low and high in self-concept clarity did not significantly differ in communal or agentic domains when the actual self was presented; see Table 23.

Table 23: *t test statistics for the non significant effects of self-concept clarity on impressions formed of the profile holder in the actual self presentation. Standard errors (SE) and 95% confidence intervals are displayed in parentheses.*

Condition	Variable	*M* low self-concept clarity (*SE*)	*M* high self-concept clarity (*SE*)	*M* difference (95% CI)	*t* df	*p*
Actual	Agentic	4.18 (0.11)	4.32 (0.11)	-0.15 (-0.45; 0.15)	-0.97; 148	0.33
	Communal	5.01 (0.10)	5.07 (0.11)	-0.06 (-0.36; 0.23)	-0.43; 148	0.67

M: Mean. df: Degrees of freedom.

7.3.5 Results summary

Those with high self-esteem were rated as more agentic, but not more communal, than those with low self-esteem when the actual self was presented. When idealising, those with high self-esteem were perceived as

holding more agentic and communal traits than those with low self-esteem. Low and high scorers in self-concept clarity and social comparison tendency did not differ in the extent an agentic or communal impression was formed based on their actual self presentations. However those with high levels of self-concept clarity were perceived as being both more communal and agentic than low scorers when idealising, whilst those with high levels of social comparison tendency were perceived as holding more communal traits when idealising the self than low scorers, although they did not differ in agentic impressions.

7.4 Discussion

7.4.1 Self-esteem and impressions formed

When describing the actual self only self-esteem appeared to have a significant impact on impression formation, whereas self-concept clarity and social comparison tendency did not: those low and high in self-concept clarity and social comparison tendency did not significantly differ in the agentic or communal impressions assigned to them. Those with high self-esteem on the other hand were rated as more agentic than those with low self-esteem when the actual self was described but did not project more positive communal impressions than those with low self-esteem. This may be interpreted by looking to self verification research which proposes that in day to day interactions with others the intent exists to impress onto others one's own views of the self (Swann, 2011). In keeping with this self-esteem is predicted by self perceived agentic traits, but only weakly by self rated communal attributes (Wojciszke et al., 2011). It may be the case therefore that those

with high levels of self-esteem perceive themselves to have positive agentic traits and are able to project this opinion onto others when describing the actual self. Similarly research suggests that low self-esteem individuals barely differ from those with high self-esteem in terms of their self perceptions of their communal qualities (Anthony, Holmes & Wood, 2007).

It appears that idealisation of self attributes may permit more positive agentic and communal impressions to be made of those with high levels of self-esteem than lower scorers. This might be understood by looking to the self presentational styles attributed to those with low self-esteem and high self-esteem, specifically the distinction between motivations to self protect and to self enhance (Baumeister, Tice & Hutton, 1989). Baumeister et al., suggested that high self-esteem individuals may be more likely to present a self image which focuses on their positive qualities, more likely to accept risks around self presentation, and focus on drawing attention to the self; a presentational style therefore characterised by self enhancement. Those with low self-esteem they suggest appear more self protective in their manner of self presenting to others, behaving in contrary ways to their high self-esteem counterparts – being more wary of risk taking and holding a reticent or self efficacing self presentational stance . It may be the case therefore that if those with high self-esteem are more readily able to self enhance then idealising the self might be easier for them, and subsequently if self protection characterises those with low self-esteem idealising may be more arduous. This may therefore offer an explanation as to why those with high self-esteem garner a more positive idealised self impression than their low scoring counterparts.

7.4.2 Self-concept clarity and impressions formed

The findings around self-concept clarity suggested that people low and high in self-concept clarity did not differ in how agentic or communal they were perceived to be when they described the actual self, as such the impressions formed of these individuals in agentic or communal domains did not differ as a function of their self-concept clarity when they described the actual self. However when idealising those with high self-concept clarity were perceived as both more agentic and more communal than those with low levels of self-concept clarity. Research suggests that those with lower levels of self-concept clarity have less certainty in self views and possess self views which are easily changeable (Campbell et al., 1996). These individuals also reportedly take longer to identify descriptive traits that they possess and are also more likely to endorse self descriptive traits that should be mutually exclusive (e.g. careless and careful) than those with a clearer self-concept (Campbell, 1990). Portraying these kinds of characteristics in a self presentation may therefore make it more difficult for others to form a positive impression of them. In keeping with this research suggests that those with high self-concept clarity have more satisfying romantic relationships with others than those with as less clear self-concept (Lewandowski, Nardone & Raines, 2010).

It follows then that in order to present a self which garners a desirable impression one needs an understanding of several things, including one's own self attributes and what others may find attractive at first impression. Further individuals also need to hold a knowledge of how the self presentations may

be perceived by others, that is to hold accurate metaperceptions. It may be the case therefore that those with low self-concept clarity may find developing accurate metaperceptions more challenging when formalising an idealised self presentation, although it is acknowledged that this assumption is tentative since empirical testing is lacking. It would appear then that those with clear and confident self views may be able to articulate an ideal self which contains the characteristics that appeal to others in the form of a more positive agentic and communal impression than those with low levels of self-concept clarity.

7.4.3 Tendency to social comparison and impressions formed

In terms of tendency to social comparison those low and high in social comparison tendency were seen not to differ in how agentic or communal they were perceived to be when presenting the actual self to others. However when idealising those with a high social comparison tendency were rated as more communal than those who compared less often than others, however they did not differ in terms of agentic impressions formed. To consider the communal impressions formed, it is noted that those with high levels of social comparison tendency are reportedly especially pro-socially orientated, interested in the self in relation to others and in engaging with other people, and not least it should be remembered that for these individuals other people are important for the purposes of social comparison and to inform self views (Buunk & Gibbons, 2006). As such portrayal of a communal self may be especially important for those with high tendency to social comparison (when they idealise the self) because they like other people and want to get to know others to fulfil their pro-social orientation and their social comparison tendencies. The fact that

those with a low social comparison tendency receive less positive communal impressions when idealising may reflect the notion that these individuals may care less about how they are perceived by others and are less pro-socially orientated (Buunk & Gibbons, 1999).

It was observed that those low and high in social comparison tendency did not differ in terms of the agentic impressions formed of them when presenting the ideal self. It may be the case that whilst those who compare frequently to others might be concerned with presenting a communal self image they may be less concerned with portraying an agentic self. Evidence for this suggestion is based on the research around the attributes which correlate to social comparison tendency, in particular interpersonal orientation, which reportedly represents one of the strongest correlates to social comparison tendency (Gibbons & Buunk, 2006). It may therefore be; as suggested by Gibbons and Buunk; that social comparison might not represent a competitive or autonomous self nature but a pro-social interest in others and interdependent self, and as such when those who compare frequently idealise the self they impress on others a self image more in keeping with 'getting along' (which may constitute communion; Hogan 1983;) rather than 'getting ahead' (which may define agency; Hogan, 1983).

7.4.4 Summary

When describing the actual self then only self-esteem appeared to impact on how agentic or communal an individual was perceived to be. Via their textual self presentation those with high self-esteem were rated as more agentic than those with low self-esteem, however they were not rated as more communal.

Those with a clear self-concept did not differ in the impressions others formed of them when presenting the actual self than those with unclear self views, and neither did those who compare frequently to others differ in how they were perceived to those who compared less frequently. This may suggest that there is some particular quality within self-esteem which permits individuals to portray an actual self which holds more agentic qualities than those with low self-esteem, and this ability does not extend to those who have clear self views or those who compare frequently to others.

When describing the idealised self those with high self-esteem and clear self views (self-concept clarity) provided a textual self presentation which was perceived as more agentic and more communal than those with lower levels of self-esteem or less clear self views. It appeared the ability to idealise a self presentation provided greater benefit to those with both positive and clearly held self views. Finally those who compared frequently to others provided a textual self presentation of the idealised self which elicited a more positive communal impression than those who compare less frequently to others.

7.4.5 Self-evaluation variables and their influence on impression construction of actual and idealised selves and impressions formed

Within the study of the previous chapter it was suggested that those with low self-concept clarity may display more positive emotions when idealising the self compared to describing the actual self than those with a clearer self-concept, whilst those with low self-esteem may portray less anxiety when idealising the self. However within the current study it was their high scoring counterparts who received more positive agentic and communal impressions

when idealising. It seems that even though the poor may be able to get richer in terms of ability to describe a more desirable self, they are not perceived as positively as high scorers. Research suggests that those with low self-esteem approach interactions with others fearful of social rejection (Leary & Downs, 1995) however in offline interactions it is suggested that this fear may be unfounded; that these individuals are often not generally differentially perceived to those with high self-esteem (Baumeister et al., 2003). Yet the suggestion from this study is that when opportunities are available to idealise a self presentation (as may be the case in certain online environments) despite the affordances of such communications (time, optimisation of self attributes, Walther, 1996; textual focus in this instance) it is high self-esteem individuals who receive a more positive impression from others. Similarly for those with low self-concept clarity despite the optimisation of their self presentation it was the high scorers who received more positive agentic and communal impressions during idealising. It may be suggested therefore that these individuals who have low levels of self-concept clarity may be less able to develop new relationships with others in online settings, which may therefore hinder them on the path to self-concept unity.

The picture is not limited to these two self evaluative dimensions however. The results suggested that when describing the actual self those with a low tendency to social comparison wrote more freely than their high scoring counterparts (used more words). This might reflect the idea that these individuals are less concerned with how they are perceived by others (Buunk & Gibbons, 2006) and when idealising these low scoring individuals reduced the amount they wrote significantly more than the high scorers. However most

notably these individuals who compare less frequently to others received a less positive communal impression than those with high tendency to social comparison when idealising the self. The pro-social orientation and desire to get on with others (Gibbons & Buunk, 1999) may therefore be reflected in the greater communal impression formed of the idealised self presentation of those with a high tendency to compare to others. In this instance it appears that those who compare themselves frequently to others when granted the opportunity to idealise a textual self presentation may receive a more positive communal impression than those who have a lower level of social comparison tendency. The implication being that certain online environments permitting idealisation of self attributes might hold particular advantages for these high scorers in the realms of impression formation.

These revealing findings illustrate the importance of examining how online self presentation attempts are perceived by others as a function of self evaluation variables, a topic has received limited research attention and mostly in relation to self-esteem (although Stopfer et al., 2014 display a comprehensive examination of personality and self-esteem in this domain). It is important to continue to combine the examination of impression formation and impression construction attempts as they represent individual processes with an interactive nature. Indeed Burgoon and Hoobler (2002) suggest that the "flip side of impression formation is impression management" p264.

However, limitations should be noted. This study would have benefited greatly from a larger sample size to enable more complex analysis of the contributions of the self-evaluation variables. A more appropriate analysis may have been a

series of two way ANOVAs, with the dependent variables being the agentic impression score of the actual self, the agentic impression score of the ideal self to begin with. With between subjects factors being the median split scores for self-esteem (low and high) for example, and repeating this process for the communal impressions in the two self presentation types (actual and ideal) and each self-evaluation variable (self-concept clarity and social comparison tendency median split scores). This approach was duly considered. However because the three self-evaluation variables (self-esteem, self-concept clarity and tendency to compare to others) tend to correlate and are therefore related to each other, an ANOVA was seen not to produce sufficient numbers in each of the combinations (insufficient participant numbers were observed in some of the cells). For example people with high self-esteem tend to also have high self-concept clarity, but very few people have high self-esteem and low self-concept clarity, and theoretically this would be expected (e.g. Campbell, 1990).

The insufficient numbers in some cells therefore meant such an analysis was not a viable option. However the analyses performed within this study does in this instance permit demonstration of subtle effects which may have been less observable via alternative analysis methods. Indeed leading research by Pennebaker and colleagues into linguistic styles and individual differences have demonstrated how small effect sizes are both typical in this context and revealing (e.g. (Pennebaker & King, 1999) highlighting subtleties in the way individuals use language (e.g. Pennebaker, Mehl, & Niederhoffer, 2003; Tausczik & Pennebaker, 2010). As such the use of the *t* test in this instance therefore offers a level of clarity and simplicity to interpret and report novel

and interesting findings whilst duly acknowledging the limitations posed by the analyses suited to the dataset.

A further point of consideration for this study should also be noted. This study did not ask how likely the raters were to want to get to know the individuals that they read about via the about me profiles. Future research should consider this aspect as this may provide additional revealing information about the consequences of online self presentation attempts. Similarly, there existed on the part of the profile writers the lack of expectation of continued interaction. Whilst those who wrote the profiles knew they would be rated by others, there was no expectation of continued interaction as this profile was written for experimental purposes only. Impression motivation (the desire to perceived in a particular way) may therefore be reduced if the likelihood of interaction with that person at a later date is absent. However even without the contribution of the expectation of continued interaction there appear to be differences in how online self presentations are constructed and evaluated by others as a function of self-evaluation variables.

Chapter 8. Final Discussion and Summary

8.1 Summary of findings.

8.1.1 Self evaluation variables and Facebook use

Via the use of a specially designed daily diary, the first study obtained information around which individual differences variables predict engagement with specific Facebook activities, rather than general site use. It was revealed that Facebook Intensity (defined as emotional connectedness to the site and integration into daily life; Ellison et al., 2007) predicted engagement with several activities and these may be interpreted as those associated with a fear-of-missing-out (Wallace, 2015). Whilst self-esteem, clarity of self-concept and tendency to social comparison did not predict engagement with a particular type of Facebook activity, self-esteem was seen to predict positive mood during site use. The second study examined mood change after engagement with two specific types of Facebook activity compared to a control condition (of randomly surfing the Internet). These two activities were viewing the Facebook newsfeed (intended to elicit social comparison) and editing the Facebook profile (intended to enable an optimal self presentation). Findings suggested that those with low self-esteem of various types, namely appearance and performance self-esteem; experienced a negative mood shift after editing the Facebook profile, whilst their high scoring counterparts reported a positive mood shift after this activity. Viewing the Facebook newsfeed also elicited a change in mood, with those high in social comparison tendency experiencing a negative mood shift after this activity, whilst those who compared less often reported a positive mood change.

8.1.2 Self presentation on Facebook

the third study considered the types of language individuals' use in their Facebook status updates, and also considered how the number of Facebook friends an individual holds may be used as a self presentation attempt (e.g. to display popularity). It was anticipated that revealing information about how individuals use language in their Facebook status updates may assist in understanding the different impact the Facebook experience appears to have on users; the way they are perceived by others (via their writing) may influence the type of reception they receive and this in turn may colour their Facebook interactions in a positive or negative way. Findings suggested that self-esteem predicted use of positive language in status updates, and also that self-concept clarity and social comparison tendency predict the number of Facebook friends and suggest an alternative motive besides an attempt to display popularity, for example for social comparison purposes.

8.1.3 Self presentation beyond Facebook

The final studies acknowledged the existence of online social networking sites beyond Facebook, noting for example that online arenas can differ in the extent to which one can idealise the self and deviate from the offline or actual self persona. To examine this, individuals wrote two about me profiles for a social networking site of their choosing, one describing the actual self (as it is now) and the second the ideal self (the self one would ideally like to be). These two self presentation types were intended to permit extrapolation to online environments where individuals may be able to idealise a self image. Analyses revealed those with low self-esteem and low self-concept clarity can

become more positive and less anxious when idealising the self, holding implications for self-presentation in online environments, appearing to suggest a poor-get-richer effect (Poley & Luo, 2012).

Findings were not limited to self-esteem and clarity of self-concept however. Whilst both low and high scorers in social comparison tendency had a larger word count in the actual self than the ideal self presentation, the difference was largest amongst those who compared infrequently to others. These individuals used a much larger word count in the actual self than the ideal. This may suggest that these individuals are less concerned with how they are perceived by others and may therefore hold wider implications for impression management and subsequent impressions formed.

8.1.4 Impression formation on social media

The final study considered the implications of these online self presentations, with raters viewing one of these actual and ideal self profiles and rating the profile holder on agentic and communal domains, to imitate the manner in which these self presentations may be assessed if published online. It was revealed that despite the ability of those with low self-esteem and low self-concept clarity to display a more positive and less anxious ideal self, it was their high scoring counterparts (those with high self-esteem, and a clearer self-concept) who received the more positive impressions from raters. Social comparison tendency findings were perhaps more reassuring, those who compared frequently to others received the more positive impression than their low scoring counterparts when idealising the self, which may hold benefit

to them when forming new friendships with others.

8.2 Analysis of findings

8.2.1 Facebook activities chosen.

The first study reported that Facebook intensity predicted several Facebook behaviours (e.g. looking at other users' photos or profiles, seeing what friends were up to, and viewing the Facebook newsfeed). This suggests that people who perceive a large degree of emotional connection to the site engage in some Facebook activities in particular most often, and it appears to be those that prevent 'fear-of-missing-out' (Wallace, 2015). Research suggests that fear-of-missing-out may be associated with numerous problematic Internet use behaviours (Przybylski, Murayama, DeHaan & Gladwell, 2013). These findings may offer further support to this notion, and might act to uncover a motivation for continued and potentially problematic usage in certain individuals.

The absence of findings around self evaluation variables predicting different types of Facebook feature use is contrary to previous research in the area. For example Wang et al., (2012) in their study of Renren (a site with similar properties to Facebook) revealed differences in the activities those low and high in self-esteem choose to engage with on the site, whilst Tazghini & Siedlecki, (2013) found that low and high self-esteem individuals cite differences in the pros and cons to use and differences in choices of Facebook activities to engage in. This lack of support for previous research may reflect the differences in assessment of social networking website activity. Wang et al.'s study for example devised a measure of activities undertaken on Renren

asking about retrospective social networking site use, including items such as "I play online games on Renren often". Subsequently the differences in findings may reflect methodological differences; e.g. study 1 asked participants to document their Facebook activity on a daily basis, whereas Wang et al. appeared to use general reflective measures on usage behaviour, which are reportedly generally less accurate, (Sagioglou & Greitemeyer, 2014).

This point also extends to Tazghini and Siedlecki, (2013) and their measures of Facebook activities. An instrument was designed to assess Facebook usage which asked about the frequency of various Facebook actions. Details on this measure are limited in the paper; however it appears that this is a retrospective measure of typical behaviours on the site rather than assessing usage behaviours over several days. It may be the case therefore that the lack of support for previous research findings (that those low and high in self-esteem differ in the activities they undertake on Facebook) may reflect differences in the way usage was assessed.

Whilst the findings of the first study were unable to report differences in choice of Facebook activity by self evaluation variables, it appeared that despite this self-esteem appeared relevant with self-esteem predicting positive mood during site use. So whilst the present research may not support previous studies that suggest those low and high in self evaluation variables differ in the activities they engage with on Facebook, it does suggest that self-esteem may be relevant in terms of the impact such behaviour has on mood.

8.2.2 Impact of specific Facebook activities on mood

Previous research has suggested that people rate time spent on Facebook as

less meaningful and experience less positive mood than those in a control condition – where they engaged in any Internet activity apart from social networking (Sagioglou & Greitemeyer, 2014). However this study did not distinguish between different types of Facebook activity, as such the second study of this thesis further develops research understanding. The second study allocated participants to one of three conditions; viewing the Facebook newsfeed, editing the Facebook profile or a control condition of engaging with any Internet activity but not using a social networking website. It was revealed that after viewing the Facebook newsfeed those with a high tendency to social comparison decreased in Energetic Arousal, whilst low scorers increased in Energetic Arousal. This is supportive of the work of Lee (2014) who found individuals who had a higher social comparison tendency reported a 'negative feeling' from social comparison on Facebook. This study therefore furthered that to examine the types of mood impact experienced beyond retrospective judgements, offering both support and extension of previous findings.

Findings are similar to Vogel et al., (2015) study 2, who found those individuals who compared themselves frequently to others (held a high social comparison tendency) reported lower self perceptions and lower state self-esteem after viewing an acquaintance's Facebook profile than those who had a lower social comparison tendency. However, this study only assessed mood and state self-esteem after the interventions rather than a direct measure of change via examining differences in these areas before and after. This is problematic because groups may have differed in mood and state self-esteem prior to the intervention, but obtaining data pertaining only to mood or self-esteem after intervention prevents a comparison of before and after.

Research in this thesis also identified that following editing the Facebook profile those with high Appearance self-esteem reported an increase in Hedonic Tone and Energetic Arousal, with low scorers reporting a decrease following editing the Facebook profile. Those with Higher levels of Performance self-esteem reported a decrease in Tense Arousal and low scorers reporting an increase in Tense Arousal after this task. These findings are similar to Vogel et al., (2015) study 2 who found that those individuals who viewed their own Facebook profile had a higher level of positive affect than those who viewed an acquaintance's profile. However, the current research would suggest that the act of editing the Facebook profile does not inevitably lead to a mood increase, it appears that levels of state self-esteem (dependent on type and if it is low or high) are also relevant. Whilst previous studies have suggested that those who edit their Facebook profile have higher self-esteem after than those who did a control task (e.g. Gentile et al., 2012; Gonzales & Hancock, 2011) a before and after comparison is not given.

Further, research has also examined specific types of social comparison, which may have adverse consequences, for example upward comparisons in specific domains. High self-esteem has been seen to buffer against the adverse affects of upward comparison on career domains on social media sites, whilst upward comparison on domains of physical attractiveness appear associated with adverse outcomes(Haferkamp & Kramer, 2011). Whilst the above research did consider which specific types of social comparison may cause problems, e.g. upward comparison in specific domains, they did this via mock ups. Whilst the present research supports the idea that upward comparisons on Facebook can be problematic, it also provides more details about an ecologically valid

experience and more detail of the specifics of the mood impact, although it is acknowledged that the type of Facebook content viewed by participants was not assessed. Future research may therefore wish to examine the content users view using genuine but not mocked Facebook content. Looking at content in this manner might also help explain the differences in mood, as what individuals write may influence how people respond, which may act to colour the Facebook experience.

8.2.3 Self evaluation variables and self presentational tactics on Facebook

The third study via examination of status updates suggested that it was those with high self-esteem who used more positive emotions within status updates than low self-esteem scorers, suggesting that those with lower self-esteem might find it more challenging to optimise a self presentation than those with high self-esteem and subsequently use less positive language. This is consistent with Forest and Wood (2012) who found that the status updates of those with low self-esteem were less positive than those with high self-esteem. This is contrary to theory in the area, for example, Walther (1996) observed that many online communications permit individuals increased opportunity to optimise a self-presentation, with research suggesting that as an asynchronous communication medium with no immediate requirement to respond, individuals can take time to choose images and words to optimise the opportunity for intended self presentation (Mehdizadeh, 2010). For example, when editing the Facebook profile it has been suggested that physical gating features (such as present self appearance) may decrease in importance (Zhao et al., 2008), with emphasis instead being placed on uploaded words and

pictures. Thus illustrating how individuals have both more time and a greater ability to control the cues to the self in these settings than they do in offline interactions, with suggestion individuals may therefore be able to obtain increased control over the cues to the self which are given to others (Joinson, 2004).

However findings within the third study of this thesis appear to suggest that despite the affordances of profile editing, including the asynchronous nature, reallocation of cognitive resources permitted and selective self presentation (Walther, 1996), individuals with high self-esteem may have felt more able to exploit the affordances of the communication medium to their advantage. This may reflect the nonymous nature of the site, since users' offline and online identities are often linked (Zhao et al., 2008) and therefore Facebook may act to constrain those with low levels of self-esteem by limiting the extent of idealisation of attributes which can take place. As such there may be limits placed on the creativity of self presentation in such an anchored reality community.

Findings were not limited to self-esteem within this third study. It was suggested that those with a high social comparison tendency score had more Facebook friends than lower scorers. This might reflect the pro-social orientation and interest in others characterised by those who compare to others frequently, in keeping with research by Gibbons and Buunk (1999) and may also reflect a social comparison motive, which may also explain why those with low social comparison tendency have fewer Facebook friends. It is notable that self-concept clarity correlated negatively with social comparison tendency within this study, and further that those with low levels of self-

concept clarity also had more Facebook friends than those with a clearer self-concept. It might therefore be the case that having large numbers of Facebook friends serves a social comparison function amongst those with low self-concept clarity. Alternatively there is suggestion that those with levels of self-concept clarity may have difficulty forming friendships with others (Valkenburg & Peter, 2008) and as such Facebook users with an unclear self-concept may be motivated to use Facebook to collect up Facebook friends to help fill this void, as a way of helping them to form friendships with others, which those with high self-concept clarity may feel less motivated to do. Whilst it was anticipated therefore that the number of Facebook friends that a user holds might represent an attempt to display a popular self presentation in keeping with the findings of Lee, et al., (2012) , the findings suggest that more complicated motives might be at play, such as comparison with others or developing friendships with others. With regards to the mood findings around self-esteem it appears that it may be the case that on Facebook or similarly anchored sites those with low self-esteem might be constrained by the limitations of their own personalities.

8.2.4 Actual and ideal self presentation

The final studies began consideration of other types of online social media, acknowledging the existence of sites beyond Facebook. It was found that when idealising those with low self-concept clarity and low self-esteem can become more positive and less anxious than when describing the actual self. It may be the case that the ability to deviate away from actual self, for example on less anchored online environments and those less restrictive ones may have a particular benefit for them in terms of self presentation. This is

supportive of the idea that the benefits of online self presentation may be especially useful for them in specific online environments. Factors such as asynchronicity, increased control over content, cognitive reallocation of resources etc., (Walther, 1996), may indeed be useful, but it appears most useful to the poor when they can deviate away from the actual self.

It was revealed that whilst both low and high scorers in social comparison tendency had a larger word count in the actual self than the ideal self presentation, the difference was largest amongst those who compared infrequently to others. These individuals used a much larger word count in the actual self than the ideal. This may suggest that these individuals are less concerned with how they are perceived by others, and is in keeping with research by Gibbons and Buunk (1999) around the characteristics of those who compare frequently and those who do not. This also coincides with the impression formation findings in the next study. It was found that when idealising self attributes those who compared frequently to others received the more positive impression out of low and high scorers. This may reflect, as Gibbons and Buunk (1999) suggest the pro-social orientation and interest in others displayed by those who compare to others frequently. Findings around impressions formed of those low in self-esteem and clarity of self-concept were less reassuring. When these individuals idealised their self attributes and formed them into an about me profile, raters perceived them less positively than those with a clear self-concept and high self-esteem.

8.3 Who gets richer?

Overall study findings appear to support the Rich-Get-Richer Hypothesis

(Valkenburg, Schouten, & Peter, 2005). Despite the affordances of online communication this thesis suggests that those with high levels of self-esteem and a clear self-concept gain more benefits than their low scoring counterparts. Further, research evidence suggests that those with low self-concept clarity might find interaction with others more challenging, for example a negative correlation between self-concept unity and loneliness and social anxiety has been observed (Valkenburg & Peter, 2008), whilst low self-esteem is also associated with social anxiety (Leary & Macdonald, 2003). As such the findings in this thesis may overall lead to suggestion that those who find interaction with others particularly challenging (e.g. those with low self-esteem or an unclear self-concept) are not overly assisted in impression management in certain online settings, specifically ones which are anchored to existing offline networks.

Similarly, low self-esteem for example is associated with fear of rejection from others and protective self presentational style to attempt to minimise this risk (Leary et al., 1995). If, as this research suggests, those with low self-esteem do not elicit an overly desirable first impression in others when idealising self attributes in their self presentations, then they may be less likely to form new relationships with others to allow them the realisation that their fear of social rejection is unfounded. Interestingly in offline interactions low and high self-esteem individuals are not generally differentially perceived at first impression, even though both groups often cite this to be the case (Baumeister et al., 2003) whilst in contrast this research suggests this may not be the case in online interactions.

When considering the tendency to compare to others the interpretation over who gets richer is more complicated. Engagement with the Facebook newsfeed might cause a negative mood shift for high scorers, but engagement with the site with multiple Facebook friends may offer benefits if one recalls the characteristics of a pro-social orientation amongst these individuals described by Gibbons and Buunk (1999). Results suggested that those with a high tendency to compare to others were perceived more positively when idealising in the form of more positive communal impressions than those who compare to others less frequently. This suggests a particular benefit of idealising a self presentation might exist for those with high tendency to compare to other people. They might therefore be better able to elicit a positive impression from others when permitted to idealise a self presentation, and if the idea that they are pro-socially orientated and hold an interdependent self and desire others for social comparison (Gibbons & Buunk, 1999) holds true then this ability to elicit a positive impression may help them in the first steps to forming new friendships.

8.4 Relevance to theory

Findings around those with low self-esteem appear particularly relevant to the Sociometer Theory (Leary et al., 1995). According to Sociometer Theory those with low self-esteem tend to perceive themselves as less well liked and are fearful of social rejection, with research typically suggesting that they are wrong in this perception: research for example suggests that those with high self-esteem do not have superior social skills than their low scoring counterparts (Baumeister et al., 2003) and that they are not better liked than those with low self-esteem (Brown, 2014). However, the findings of the final

study suggest that the metaperceptions those with low self-esteem hold may well be accurate, they may indeed be less well liked than those with high self-esteem. It may be the case therefore that as Sociometer Theory suggests self-esteem is the result of one's perceived relational value.

8.5 Practical implications

Sociometer Theory is based on the idea that group membership and social acceptance are vital human needs (Leary et al., 1995). The Internet is increasingly a way in which individuals maintain their group membership and pursue social acceptance in their interactions with others. As Internet use becomes ever more widespread, with it comes public anxiety, including around the style of usage amongst young people (Livingstone, 2003). It is suggested that Internet use amongst contemporary youth is near ubiquitous (Flanagin, Metzger, & Hartsell, 2010). Further, there is suggestion that almost 1 in 4 of 8 to 11-year-olds and 3 in 4 of 12 to 15-year-olds has a social media profile, (Ofcom 2017) thus exposing them to social comparison information about others. Increasing awareness around the potential for adverse consequences following social comparisons on social media represents a practical implication of these research findings. Research suggests that if friends on Facebook are less well known heuristics or rules of thumb are used to fill in the gaps, and lead to information about others displayed on Facebook interpreted with increased value (Chou & Edge, 2014). Increasing knowledge in this area amongst young people may therefore act to encourage usage that benefits them psychologically.

Similarly, there are practical implications for another area of interaction with others. Online dating is no longer unusual, with 84% of dating app users

stating they used a dating app to find a romantic relationship (Statista, 2017). Increasing knowledge of how self disclosures may be received is of vital importance here, since available information is used to ascertain suitability as a dating partner. If, as the current research suggests, those with low self-esteem and less clear self-concepts are less well received than their high scoring counterparts when designing an idealised about me profile there are clear implications here for an individuals' self worth, and it would warrant consideration what it is about the disclosures of those with low self-esteem and low self-concept clarity when idealising the self, lead them to be less positively perceived than high scoring counterparts.

8.6 Unique contribution.

The current thesis has considered a range of self-evaluation variables in a more comprehensive manner than previous research to date. Specifically the first study examined Facebook as a toolkit of features (Smock et al., 2011) considering the different activities individuals may engage with on the site in the context of self-evaluation or individual differences variables, in a more integrated and comprehensive manner than previous research. Further, this study employed a diary methodology including assessment over several days rather than general retrospective judgements of behaviour, as research suggests that such judgements may be inaccurate (Sagioglou & Greitemeyer, 2014), therefore providing a more robust and reliable account of the social media behaviour of the participants sampled. This study enabled identification of the individual differences variables which may predispose individuals to at risk usage of the site. It provided insight into the ways in which Facebook intensity may manifest itself in terms of types of feature used on the site and

offered an explanation that may reflect wider motivations for having an intense emotional connection to Facebook and for differential usage. Further the first study illustrates how engagement with Facebook may have positive psychological outcomes in terms of mood, dependent on the self-esteem of the user. This may therefore assist in identifying those at risk of problematic usage and conversely for whom site use has a particular benefit (e.g. individuals with high self-esteem).

The experimental approach in the second study considered the impact of Facebook use on mood as a function of type of activity undertaken on the site and self-evaluation variables, comparing mood change in a way previous research has not typically considered. This includes the use of all state self-esteem measures, comparison of mood before and after intervention, and the direction of participants to engage with specific Facebook activities. The examination of all of the state self-esteem facets provides detailed analysis into the different aspects of self-esteem and how these relate to online behaviour and suggests particular relevance for performance and appearance self-esteem subsets, which previous research has typically not obtained due to the summing of state self-esteem subsets.

The third study in this thesis examined actual Facebook content, removing the self report element associated with reflections on Facebook behaviour. The study considered textual self presentation as this is less readily examined in Facebook research than visual markers (e.g. Hum et al 2011), examined the contribution of a range of self-evaluation variables (personality is often researched e.g. Amichai-Hamburger & Vinitzky, 2010), as well as number of

Facebook friends anticipating this to reflect an attempt to demonstrate popularity. This study identified linguistic differences by virtue of an individual's level of self-esteem, and may offer insights into why those with low self-esteem may have a less positive emotional experience on Facebook. Subsequently this study added to the research evidence around the Rich-Get-Richer Hypothesis (Valkenburg, Schouten, & Peter, 2005) as applied to online interactions. In addition the findings around the number of Facebook friends an individual holds may offer insights into an alternative explanation besides an attempt to display popularity. Whilst originally considered as a popularity statement or declaration, these findings permit suggestion that motivations might be broader than that, and may reflect individual differences in self-concept clarity and tendency to social comparison.

The last two studies assessed how textual self presentation of actual and ideal selves might differ, allowing extrapolation to be made about how individuals may self present when afforded opportunities for idealising of self attributes (e.g. certain online environments) and how this might differ as a function of self-evaluation variables. The final study completed this examination of actual and ideal self presentation and considered how these individuals were perceived by others; how individuals might be differentially perceived as a function of these self-evaluation variables and the self presentation mode (actual or ideal) in a way that appears untouched by previous research.

8.7 Limitations

Several studies within this thesis employed the use of the median split, the procedure of splitting a variable of a continuous nature into one of two groups

(typically low and high, as was the case here). These were true median splits to ensure best use of available data; as such no neutral middle ground scores were eliminated. However this in itself prevents a true dichotomy and it acknowledged that removal of the neutral zone in the data would have avoided this. This dichotomisation of variables is not without its critics and has been hotly debated within the academic literature (e.g. Iacobucci, Posavac, Kardes, Schneider & Popovich, 2015; Rucker, McShane, & Preacher, 2015). Criticisms include loss of statistical information, reduction in statistical power, increased likelihood of type 1 errors or 'false negatives' (Iacobucci et al., 2015) and the artificiality of assigning scores close to the mean as either 'low' or 'high'. However, MacCallum, Zhang, Preacher and Rucker (2002) observe that several psychological constructs are often considered as discrete variables, and as such lend themselves readily to dichotomisation. Indeed, individuals themselves tend to evaluate themselves on a dichotomy in terms of self-esteem (high and low; Brauneis, 2016).

Median splits are also criticised for their sample dependent nature, as such different experiments will have different samples with differences in their distributions. However as Iacobucci et al., (2015) state this is the case in all samples regardless of statistical technique employed. It is further suggested that binary conceptualisation can be useful, a good match for the research problem (McClelland, et al., 2015). In fact median splits are argued to be an extremely useful research tool, permitting an ease of communication of findings (lacobucci et al., 2015) in a parsimonious manner (Fitzsimons, 2008). This may explain why dichotomising of continuous variables remains a popular method in research (Iacobucci et al., 2015). Within psychology

specifically it is suggested that 11.8% of articles in the Journal of Personality and Social Psychology employed median splits between 1998 and 2000 (MacCallum et al., 2002). Further recent cyberpsychology research has employed such dichotomising techniques, for example with regards social comparison tendency (White, Langer, Yariv & Welch, 2006), the Facebook Intensity Scale (Li, 2014) the Rosenberg self-esteem scale (Utz & Beukeboom, 2011) as well as other self-esteem measures (e.g. Barker, 2009). Further, via a series of statistical analyses researchers have reported that splitting data via the median has limited to no impact on robustness of testing (Iacobucci et al., 2015). It is however acknowledged that within future research correlational or regression models may be more preferable.

8.8 Future research.

Future research may contemplate the method of assessment of self-evaluation variables employed within this thesis when considering social media use. For example, the social comparison measure employed. An alternative measure could be deployed to assess the direction of social comparison, namely whether upward or downward social comparison is undertaken by the individual. Social comparison assessment could also consider a less retrospective measure of social comparison possibly using technological affordances. Pinkus, Lockwood, Schimmack and Fournier, (2008) for example used personal digital assistants (PDAs) on which participants were contacted at regular intervals to assess social comparisons undertaken, which may be used to provide timely and realistic social comparison assessments. Alternative measures of social comparison entirely could be employed, perhaps considering interview methodology. For example Wood et al., (1985)

conducted interviews with cancer patients, some of whom despite denying engaging in social comparisons talked in the interviews about worse off others in the manner of downward comparisons. Research may therefore consider evaluating the linguistic qualities of individuals' descriptions of their social comparison behaviours. As such, even though individuals may deny engaging in social comparisons, language employed by individuals when describing their thoughts and feelings may provide a different interpretation. However, it is duly acknowledged that retrospective judgements of social media behaviour, and experiences thereof, are not always accurate (Sagioglou & Greitemeyer, 2014).

In particular research may benefit from the use of more longitudinal studies of self-evaluation variables in relation to social media use, to ascertain how specific types of social media may impact individuals at different life stages. Many studies employ measures ascertained at a single time point, which may provide limited information on the relationship between psychological wellbeing and social media use. It is more typical to conduct analyses cross-sectionally, reporting from a single time point (e.g. Ellison et al., 2007; Ong et al., 2011; Kim, & Lee, 2011; Jelenchick, Eickhof & Moreno, 2013; Yang & Brown, 2013). Self-concept clarity is a particular example; a longer term examination of individuals' self-concept clarity and use of social media may permit examination as to how or if such media participation acts to promote self-concept unity or self-concept fragmentation, as has been considered by Valkenburg and Peter (2008). At the time of writing, self-concept clarity appears to have received very little research attention, however since the completion and discussion of the studies in this thesis, research has come to

light which examines Facebook use and self-concept clarity, suggesting a decline in self-concept clarity over time with intense Facebook use (Appel et al., in press). Future research may wish to build on these findings by considering self-concept clarity in combination with the other variables within this thesis and continuing the use of the longitudinal stance.

Similarly, longitudinal measures of self-esteem and the types of interactions individuals undertake on various social media sites may be investigated to examine how this engagement is perceived by individuals, for example if engagement with such media is perceived by users as a cost or benefit to wellbeing across the longer term. In addition to considering alternative sources of measurement of self-evaluation variables, future research building from this thesis may consider the use of multiple regression of or correlational analyses in light of concerns around medium splitting of variables, or, alternatively to use a three way split (e.g. Low, medium and high; see Krämer & Winter, 2008) if division into groups within variables is indicated.

Since Facebook remains a hugely popular social media site (Pew Research Centre, 2016) future research should also consider more recent additions to Facebook's repertoire of activities for users. Facebook is constantly evolving, and researchers may wish to consider new software updates e.g. 'liking' and 'disliking' content, how this impacts upon the individual who posted the content which received this response, which individuals 'dislike' other content and their motivations for doing so as a function of self-evaluation variables such as self-esteem, self-concept clarity and tendency to social comparison. Researchers might also consider the use of Facebook live, a

newly available function within Facebook which enables users to record, video and broadcast in real time to others. Researchers may wish to direct their focus into which Facebook users engage with this Facebook feature, and what motivates them to use this particular feature over the others available. However, whilst it is noted though that Facebook enjoys a continued popularity with users, other social media sites are gaining traction. Facebook remains the most popular followed by Instagram, Pinterest, Linked In and Twitter (Pew Research Centre, 2016). Research has begun to examine how self-evaluation variables may influence engagement with these sites; discussion will now move forward to consider suggestions for further development of research in this area.

Recent research into social comparison on photo and video sharing site Instagram (Lup, Trub, & Rosenthal, 2015 for example) has noted that overall who individuals followed on the site was important, specifically how well they were known. Findings included suggestion that the greater number of strangers that were followed the more instances of negative social comparisons and depression. However if fewer strangers were followed an association existed with more positive social comparison and lower levels of depression. Since individuals with low levels of self-concept clarity may engage in more frequent social comparisons, (a correlational finding in this thesis with similar findings reported by Butzer & Kuiper, 2006); research may wish to consider self-concept clarity in this context, especially given suggestion that those with low self-concept clarity may have more Facebook friends and so may therefore be susceptible to following less well known others on Instagram and the associated difficulties this may cause.

Future research may also wish to consider individuals use of Pinterest, a primarily image based social networking site involving the organisation of images onto virtual pin boards (Mittal, Gupta, Dewan, & Kumaraguru, 2013). Recent research has suggested that the greater the number of fitness focused Pinterest boards ('fit pins') individuals follow the more likely they are to report intent to engage in extreme weight reducing behaviours (Lewallen & Behm-Morawitz, 2016). Lewallen et al.(2016) suggested that thin ideal internalisation (endorsing an idealised body shape) predicted intent to engage in extreme weight reducing behaviours as well as the extent to which participants conducted social comparison between themselves and models in the fit pins. Limited research into social media usage as a function of self-concept clarity has been conducted, and it is suggested that Pinterest may be an avenue to continue exploration. Research suggests that those with low self-concept clarity may be more susceptible to thin ideal internalisation (Vartanian & Dey, 2013) and so it may be enlightening to consider how users level of clarity of self-concept interacts with Pinterest site use as well as types of social comparisons engaged with.

As a result of the final study within this thesis, there is suggestion that in terms of impression formation at zero acquaintance, where there is no expectation of future interaction, some receive more positive impressions than others. Future research may wish to consider impression formation and impression management where expectation of continued interaction (be that online or to move to face to face) is anticipated, and see how the self presentational attempts and impressions formed may differ, considering simultaneously the self-evaluation variables outlined within this thesis. In

keeping with this, it may be appropriate to consider not only the type of impression formed but also how likely individuals are to state that they would want to engage in future interaction with the profile holder for example.

8.9 Final word

The Internet is not a homogeneous entity and neither is the variety of social media sites available, or indeed are the individuals who engage with them. Considering different self-evaluation variables is enlightening, individual differences impact behaviour offline and so it is perhaps not surprising to find self-evaluation variables contribute to online behaviour. It is not necessarily appropriate to transpose offline findings to the online world however as some differences are noted. Marked is the fact that in face to face interactions at first impression those with low self-esteem are reportedly not differentially perceived to those with high self-esteem even though those with low self-esteem may perceive this to be true (Baumeister et al., 2003). When presentations are idealised it appears that those with high self-esteem may gain the more positive impression, as such in some online settings which permit idealisation of self attributes it may be the case that the rich receive more benefit than the poor. It also appears that those with low levels of self-esteem may not perceive positive benefits from their engagements with others via Facebook reflected in the less positive mood during site use, the decrease in positive mood following engagement with specific aspects of site use and their less positive language use in status updates comparative to their high scoring counterparts. Meanwhile those with a high tendency to compare to others might experience negative outcomes from some aspects of online interactions (e.g. the viewing of the Facebook newsfeed) whilst in others they

might receive particular benefits (e.g. idealising a self presentation leading to a positive impression formed of them). Social media engagement may hold advantages and disadvantages for users dependent on the type of activity engaged with and the individual differences variables of the user.

Whilst research into these forms of interactions with others via social media remains in its infancy, this thesis provides a unique contribution to the growing field of knowledge via its consideration of a range of self-evaluation variables and manner of social media engagement. This thesis has considered various self aspects: the clarity of the self-concept, the positivity or otherwise of the self-concept, the extent to which the self-concept is informed by comparisons with others and the ways that these different self-evaluations may influence aspects of Facebook behaviour and the psychological consequences of engaging with social media. Facebook was considered as a toolkit examining engagement with the diverse mechanisms contained within the site, examining which features individuals use, mood impact of engagement with specific site functions, as well as how they textually self present and engage in other site features such as how many Facebook friends they hold. Further, this thesis moved on to consider how individuals' self presentational stances may differ dependent on whether an actual or ideal self is presented, demonstrating how this may hold implications for online environments and how these self presentations might differ as a result of several self-evaluation variables. Finally, the types of impressions formed based on these self descriptions were examined enabling consideration of how these self presentations may be received by others.

Individuals' self views inform what they feel and do (Swann, Chang-Schneider & Angulo, 2007), they inform interactions with others and in turn these interactions inform such self views in a transactional or interactive process. Examination into these processes is not new, indeed it is well documented within the offline world that individuals' levels of self-esteem (e.g. Swann et al., 2007) clarity of self-concept (e.g. Campbell, 1990) and social comparison tendency (e.g. Buunk & Gibbons, 2007) influence individuals interactions with others within the offline world. It appears though a direct transfer over of these findings into the online world may be inappropriate as the online world may contain several distinct differences from traditional face to face interaction (Walther, 1996). Via this thesis contemplation has been provided of the complex intertwining between the self and others in a rapidly changing online world of communication, and provides a basis for further investigation into this online world of social media as it continues to grow and develop.

Chapter 9: References

Abele, A. & Wojciszke, B. (2014). Communal and agentic content in social cognition: A dual perspective model. *Advances in Experimental Social Psychology, 50*, 195-255.

Abramson, L. Y., Garber, J., & Seligman, M. E. (1980). Learned helplessness in humans: An attributional analysis. In J. Garber and M.E.P. Seligman (Eds.), *Human Helplessness.* (pp. 3-35). New York: Academic Press.

Alicke, M. Klotz, M. Breitenbecher, D. Yurak, T. & Vredenburg, D. (1995). Personal contact, individuation, and the better-than-average effect. *Journal of Personality and Social Psychology, 68*(5), 804-825.

Amichai-Hamburger, Y. & Barak, A. (2009). Internet and well-being. In Y. Amichai-Hamburger (Ed.) *Technology and Well-being*. (pp 34-76) Cambridge University Press.

Amichai-Hamburger, Y. & Hayat, Z. (2013). Personality and the Internet. In Y. Amichai-Hamburger (Ed.), *The social net: understanding our online behavior* (pp. 1-20). New York: Oxford University Press.

Amichai-Hamburger, Y. (2012). Personality, individual differences and Internet use. In A. N. Joinson, K. Y. A. McKenna, T. Postmes, & U.D. Reips (Eds.). *Oxford Handbook of Internet Psychology* (pp. 187-205). Oxford University Press.

Amichai-Hamburger, Y., & Furnham, A. (2007). The positive net. *Computers in Human Behavior, 23*(2), 1033-1045.

Amichai-Hamburger, Y., & Vinitzky, G. (2010). Social network use and personality. *Computers in Human Behavior, 26*(6), 1289-1295.

Amichai-Hamburger, Y., Kaplan, H., & Dorpatcheon, N. (2008). Click to the past: The impact of extroversion by users of nostalgic websites on the use of Internet social services. *Computers in Human Behavior, 24*(5), 1907-1912.

Antheunis, M. & Schouten, A. (2011). The effects of other-generated and system-generated cues on adolescents' perceived attractiveness on social network sites. *Journal of Computer-Mediated Communication, 16*(3), 391-406.

Antheunis, M., Valkenburg, P., & Peter, J. (2010). Getting acquainted through social network sites: Testing a model of online uncertainty reduction and social attraction. *Computers in Human Behavior, 26*(1), 100-109.

Anthony, D., Holmes, J. & Wood, J. (2007). Social acceptance and self-esteem: tuning the sociometer to interpersonal value. *Journal of Personality and Social Psychology, 92*(6), 1024- 1039.

Appel, M., Schreiner, C., Weber, S., Mara, M., & Gnambs, T. (in press). Intensity of Facebook use is associated with lower self-concept clarity: Cross-sectional and longitudinal evidence. *Journal of Media Psychology.*

Attrill, A. (2012). Sharing only parts of me: Selective categorical self-disclosure across Internet arenas. *International Journal of Internet Science, 7*(1), 55-77.

Attrill, A. (2015). *The Manipulation of Online Self-presentation: Create, Edit, Re-edit and Present*. Springer.

Attrill, A., & Jalil, R. (2011). Revealing only the superficial me: Exploring categorical self-disclosure online. *Computers in Human Behavior*, *27*(5), 1634-1642.

Back, M. D., Stopfer, J. M., Vazire, S., Gaddis, S., Schmukle, S. C., Egloff, B., & Gosling, S. D. (2010). Facebook profiles reflect actual personality, not self-idealization. *Psychological Science*, *21*(3), 372-374.

Bareket-Bojmel, L., Moran, S., & Shahar, G. (2016). Strategic self-presentation on Facebook: Personal motives and audience response to online behavior. *Computers in Human Behavior, 55*, 788-795.

Barker, V. (2009). Older adolescents' motivations for social network site use: The influence of gender, group identity, and collective self-esteem. *CyberPsychology & Behavior, 12*(2), 209-213.

Bartsch, M., & Subrahmanyam, K. (2015). Technology and Self-Presentation. In L. Rosen, N., Cheever & L. Carrier (Eds.) *The Wiley Handbook of Psychology, Technology and Society,* (pp. 339-358). Chichester, UK: John Wiley & Sons, Ltd.

Baumeister, R. Campbell, J., Krueger, J. & Vohs, K. (2003). Does high self-esteem cause better performance, interpersonal success, or healthier lifestyles? *Psychological Science in the Public Interest, 4* (1), 1-44.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497.

Baumeister, R. F., Twenge, J. M., & Nuss, C. K. (2002). Effects of social exclusion on cognitive processes: anticipated aloneness reduces intelligent thought. *Journal of Personality and Social Psychology*, *83*(4), 817.

Baumeister, R., Tice, D. & Hutton, D. (1989). Self-presentational motivations and personality differences in self-esteem. *Journal of Personality, 57*(3), 547-579.

Baumeister, R.F. (1998). The self. In D. Gilbert, S. Fiske, & G. Lindzey (Eds.), *Handbook of Social Psychology* (4th ed.; pp. 680-740). New York: McGraw-Hill.

Baym, N. (2010). *Personal connections in the digital age.* John Wiley & Sons.

Bazarova, N., Taft, J., Choi, Y. & Cosley, D. (2012). Managing impressions and relationships on Facebook: Self-presentational and relational concerns revealed through the analysis of language style. Journal of Language and Social Psychology, *32*(2), 121-141.

Berger, J. (2013). Beyond viral: Interpersonal communication in the Internet age. *Psychological Inquiry, 24*(4), 293-296.

Berger, J., & Iyengar, R. (2013). Communication channels and word of mouth: How the medium shapes the message. *Journal of Consumer Research, 40*(3), 567-579.

Bergman, S., Fearrington, M., Davenport, S. & Bergman, J. (2011). Millennials, narcissism, and social networking: What narcissists do on social networking sites and why. *Personality and Individual Differences, 50*(5), 706-711.

Błachnio, A., Przepiorka, A., & Rudnicka, P. (2016). Narcissism and self-esteem as predictors of dimensions of Facebook use. *Personality and Individual Differences*, 90, 296-301.

Blascovich, J. & Tomaka, J. (1993). Measures of Self-Esteem. In J. Robinson, P. Shaver, and L. Wrightsman (Eds.), *Measures of Personality and Social Psychological Attitudes. Third Edition* (pp. 115-160) New York: Academic Press

Brandtzæg, P., Lüders, M., & Skjetne, J. (2010). Too many Facebook "friends"? Content sharing and sociability versus the need for privacy in social network sites. *International Journal of Human–Computer Interaction, 26*(11-12), 1006-1030.

Brauneis, S.(2016). *The Relationship of Body Weight and Skepticism towards Advertising.* Springer Gabler, Wiesbaden

Brewer, K. (2001a). An analysis of British Journal of Social Psychology 1991*. Orsett Psychological Review 1*, 15-17

Brewer, K. (2001b.) An analysis of British Journal of Social Psychology 1998. *Orsett Psychological Review 1,* p18

Brown, J. (1986). Evaluations of self and others: Self-enhancement biases in social judgments. *Social Cognition, 4*(4), 353-376.

Brown, J. & Marshall, M. (2006). The three faces of self-esteem. In M. Kernis (Ed.), *Self-esteem: Issues and answers* (pp. 4-9). New York: Psychology Press.

Brown, J. D. (2014). Self-esteem and self-evaluation: Feeling is believing. *Psychological perspectives on the self*, *4*(8), 27-58.

Brown, J. Dutton, K. & Cook, K. (2001). From the top down: Self-esteem and self-evaluation. *Cognition & Emotion, 15*(5), 615-631.

Buffardi, L. & Campbell, W. (2008). Narcissism and social networking web sites. *Personality and Social Psychology Bulletin, 34*(10), 1303-1314.

Buffardi, L. (2011). Narcissism on the World Wide Web. In W. K. Campbell & J. D. Miller (Eds.), *Handbook of Narcissism and Narcissistic Personality Disorder: Theoretical Approaches, Empirical Findings, and Treatments* (pp. 371-381). Hoboken, NJ: Wiley.

Burgoon, J. & Hoobler, G. (2002). Nonverbal signals. In M. L. Knapp & J. Daly (Eds.), *Handbook of Interpersonal Communication* (pp. 240-299). Thousand Oaks, CA: Sage.

Burke, M., Marlow, C., & Lento, T. (2010). Social network activity and social well-being. *Proceedings of the SIGCHI conference on human factors in computing systems* 1909-1912. Retrieved from http://www.cs.cmu.edu/~./mkburke/

Butzer, B., & Kuiper, N. (2006). Relationships between the frequency of social comparisons and self-concept clarity, intolerance of uncertainty, anxiety, and depression. *Personality and Individual Differences, 41*(1), 167-176.

Buunk, A. P., & Gibbons, F. X. (2007). Social comparison: The end of a theory and the emergence of a field. *Organizational Behavior and Human Decision Processes*, *102*(1), 3-21.

Buunk, B. Collins, R. Taylor, S. VanYperen, N. & Dakof, G. (1990). The affective consequences of social comparison: Either direction has its ups and downs. Journal of Personality and Social Psychology, *59*(6), 1238–1249.

Buunk, B. P., & Gibbons, F. X. (2000). Toward an enlightenment in social comparison theory: Moving beyond classic and Renaissance approaches. In J. Suls & L. Wheeler (Eds.), *Handbook of social comparison: Theory and research* (pp. 487-499). New York: Kluwer Academic.

Buunk, B. P., Oldersma, F. L., & de Dreu, C. K. (2001). Enhancing satisfaction through downward comparison: The role of relational discontent and individual differences in social comparison orientation. *Journal of Experimental Social Psychology, 37*(6), 452-467.

Buunk, B.P. & Gibbons, F.X. (2006) Social comparison orientation: A new perspective on those who do and those who don't compare with others. In S. Guimond (Ed.), *Social comparison and social psychology: Understanding cognition, intergroup relations and culture* (pp. 15-33). Cambridge: Cambridge University Press.

Caers, R., De Feyter, T., De Couck, M., et al (2013). Facebook: A literature review. *New Media & Society, 15*(6), 982-1002.

Campbell, J. (1990). Self-esteem and clarity of the self-concept. *Journal of Personality and Social Psychology, 59*(3), 538.

Campbell, J., Trapnell, P., Heine, S, Katz, I., Lavallee, L, & Lehman, D. (1996). Self-concept clarity: Measurement, personality correlates, and cultural boundaries. *Journal of Personality and Social Psychology, 70*(1), 141-156.

Campbell, J.D., & Lavallee, L.F. (1993). Who am I? The role of self-concept confusion in understanding the behavior of people with low self-esteem. In R.F. Baumeister (Ed.), *Self-esteem: The puzzle of low self-regard* (pp. 3–20). New York, NY: Plenum.

Carpenter, C. & Spottswood, E. (2013). Exploring romantic relationships on social networking sites using the self-expansion model. *Computers in Human Behavior, 29*(4), 1531-1537.

Carpenter, C. (2012). Narcissism on Facebook: Self-promotional and anti-social behavior. *Personality and Individual Differences, 52*(4), 482-486.

Chen, X., Li, G., Hu, Y., & Li, Y. (2016). How Anonymity Influence Self-disclosure Tendency on Sina Weibo: An Empirical Study. *The Anthropologist*, *26*(3), 217-226.

Chester, A., & Bretherton, D. (2007). Impression management and identity online. In A. Joinson, K. McKenna, T. Postmes, & U. Reips (Eds.), *Oxford handbook of Internet psychology* (pp. 223–236). Oxford: Oxford University Press

Chou, H. & Edge, N. (2012). "They are happier and having better lives than I am": the impact of using Facebook on perceptions of others' lives. *Cyberpsychology, Behavior, and Social Networking, 15*(2), 117-121.

Chung, C. K., & Pennebaker, J. W. (2012). Linguistic inquiry and word count (LIWC): Pronounced "Luke,"... and other useful facts. In P. M.

Cislak, A., & Wojciszke, B. (2008). Agency and communion are inferred from actions serving interests of self or others. *European Journal of Social Psychology, 38*(7), 1103-1110.

Cohen, J. (1982). Set correlation as a general multivariate data-analytic method. *Multivariate Behavioral Research, 17*, 301-341.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences (2nd ed.).* New York: Academic Press

Cohen, R., & Blaszczynski, A. (2015). Comparative effects of Facebook and conventional media on body image dissatisfaction. *Journal of eating disorders*, *3*(1), 23-33.

Collins, R. (1996). For better or worse: The impact of upward social comparison on self-evaluations. *Psychological Bulletin, 119*(1), 51-69.

Cooley, C. H. (1902). *Human nature and the social order*. New York: Scribner.

Corcoran, J., & Dattalo, P. (2006). Parent involvement in treatment for ADHD: A meta-analysis of the published studies. *Research on Social Work Practice*, *16*(6), 561-570.

Corcoran, K., Crusius, J., & Mussweiler, T. (2011). Social comparison: Motives, standards, and mechanisms. In D. Chadee (Ed.), *Theories in social psychology* (pp. 119-139). : Wiley-Blackwell.

Correa, D., Silva, L. A., Mondal, M., Benevenuto, F., & Gummadi, K. P. (2015). The Many Shades of Anonymity: Characterizing Anonymous Social Media Content. *Proceedings of the Ninth International AAAI Conference on Web and Social Media.* 71-80. Retrieved from https://www.aaai.org/ocs/index.php/ICWSM/ICWSM15/paper/viewFile/10596/10490

Crawford, S. Couper, M. & Lamias, M. (2001). Web surveys: Perceptions of burden. *Social Science Computer Review, 19*(2), 146-162.

Crocker, J., & Wolfe, C. (2001). Contingencies of self-worth. *Psychological Review, 108*(3), 593-623.

Crocker, J., Sommers, S. R., & Luhtanen, R. K. (2002). Hopes dashed and dreams fulfilled: Contingencies of self-worth and graduate school admissions. *Personality and Social Psychology Bulletin*, *28*(9), 1275-1286.

Culnan, M. J., & Markus, M. L. (1987). Information technologies. In F. M. Jablin, K. H. Roberts, L. L. Putnam, & L. W. Porter (Eds.), *Handbook of organizational communication: An interdisciplinary perspective* (pp. 420–443). Newbury Park, CA: Sage.

de Vries, D. & Kühne, R. (2015). Facebook and self-perception: Individual susceptibility to negative social comparison on Facebook. *Personality and Individual Differences, 86*, 217-221.

Dembo, M. (1994). *Applying educational psychology in the classroom (5th ed.).* Boston: Allyn & Bacon.

DeWall, C. Buffardi, L. Bonser, I., & Campbell, W. (2011). Narcissism and implicit attention seeking: Evidence from linguistic analyses of social networking and online presentation. *Personality and Individual Differences, 51*(1), 57-62.

Dhir, A., Pallesen, S., Torsheim, T., & Andreassen, C. S. (2016). Do age and gender differences exist in selfie-related behaviours? *Computers in Human Behavior*, *63*, 549-555.

Dittmar, H., & Howard, S. (2004). Thin-ideal internalization and social comparison tendency as moderators of media models' impact on women's body-focused anxiety. *Journal of Social and Clinical Psychology, 23*(6), 768-791.

Donath, J., & Boyd, D. (2004). Public displays of connection. *BT Technology Journal, 22*(4), 71-82.

Dreyer, A. *"Behavior in a Level of Aspiration Situation as Affected by Group Comparison".* Ph.D. Thesis, 1953, University of Minnesota . Cited in Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*(2), 117-140.

Duggan, M., Ellison, N., Lampe, C., Lenhart, A., & Madden, M. (2015). *Social media update 2014.* Retrieved from http://www.pewInternet.org/2015/01/09/social-media-update-2014/

Dunning, D. (1995). Trait importance and modifiability as factors influencing self-assessment and self-enhancement motives. *Personality and Social Psychology Bulletin*, *21*(12), 1297-1306.

Edwards, P., Roberts, I., Clarke, M., DiGuiseppi, C., Pratap, S., Wentz, R., & Kwan, I. (2002). Increasing response rates to postal questionnaires: systematic review. *British Medical Journal, 324*, 1183-211.

Eftekhar, A., Fullwood, C., & Morris, N. (2014). Capturing personality from Facebook photos and photo-related activities: How much exposure do you need?. *Computers in Human Behavior, 37*, 162-170.

Ellison, N. Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends:" Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication, 12*(4), 1143-1168.

Ellison, N., Heino, R., & Gibbs, J. (2006). Managing impressions online: Self-presentation processes in the online dating environment. *Journal of Computer-Mediated Communication, 11*(2), 415-441.

Ellison, N., Vitak, J., Gray, R., & Lampe, C. (2014). Cultivating social resources on social network sites: Facebook relationship maintenance behaviors and their role in social capital processes. *Journal of Computer-Mediated Communication, 19*(4), 855-870.

Facebook, (2016). *Our Mission.* Retrieved from http://newsroom.fb.com/company-info/

Fardouly, J. & Vartanian, L. (2015). Negative comparisons about one's appearance mediate the relationship between Facebook usage and body image concerns. *Body Image, 12*, 82-88.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2013). G*Power Version 3.1.7 [computer software]. Uiversität Kiel, Germany. Retrieved from http://www.psycho.uni-duesseldorf.de/abteilungen/aap/gpower3/download-and-register

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*(2), 117-140.

Festinger, L., Torrey, J., & Willerman, B. (1954). Self-evaluation as a function of attraction to the group. *Human Relations, 7*,161-174. Cited in Lott, A. J., & Lott, B. E. (1965). Group cohesiveness as interpersonal attraction: a review of

relationships with antecedent and consequent variables. *Psychological bulletin, 64*(4), 259.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. Sage.

Fitzsimons, G. J. (2008). Editorial: Death to dichotomizing. *Journal of Consumer Research, 35*(1), 5–8.

Flanagin, A. J., Metzger, M. J., & Hartsell, E. (2010). *Kids and credibility: An empirical examination of youth, digital media use, and information credibility.* MIT Press

Flanagin, A. J., Metzger, M. J., & Hartsell, E. (2010). *Kids and credibility: An empirical examination of youth, digital media use, and information credibility*. MIT Press.

Forest, A. & Wood, J. (2012). When social networking is not working individuals with low self-esteem recognize but do not reap the benefits of self-disclosure on Facebook. *Psychological Science, 23*(3), 295-302.

Fox Hamilton, N. & Kirwan, G. (2013). A cross cultural-comparison of deception using language analysis in Irish and American online dating profiles. In A. Power & G. Kirwan (Eds.). *Cyberpsychology and New Media. A Thematic Reader* (pp.49-60). Routledge, London, UK.

Fox, J. & Moreland, J. (2015). The dark side of social networking sites: An exploration of the relational and psychological stressors associated with Facebook use and affordances. *Computers and Human Behavior 45*, 168-76.

Fullwood, C. (2015). The role of personality in online self-presentation. In A. Attrill (Ed.) *Cyberpsychology* (pp.9-28) Oxford University Press, Oxford.

Fullwood, C., James, B. & Chen-Wilson, C. (2016). Self-Concept Clarity and Online Self-Presentation in Adolescents. *Cyberpsychology, Behavior, and Social Networking, 19*(12), 716-720.

Fullwood, C., Melrose, K., Morris, N., & Floyd, S. (2013). Sex, blogs and baring your soul: Factors influencing UK blogging strategies. *Journal of the American Society for Information Science and Technology, 64*(2), 345-355.

Gentile, B., Twenge, J. Freeman, E. & Campbell, W. (2012). The effect of social networking websites on positive self-views: An experimental investigation. *Computers in Human Behavior, 28*(5), 1929-1933.

Gibbons, F. & Buunk, B. (1999). Individual differences in social comparison: development of a scale of social comparison orientation. *Journal of Personality and Social Psychology, 76*(1), 129-142.

Gilbert, D. Giesler, R. & Morris, K. (1995). When comparisons arise. *Journal of Personality and Social Psychology, 69*(2), 227-236.

Goethals, G. & Darley, J.(1977). Social comparison theory: An attributional approach. In J. Suls & R. Miller (Eds.), *Social comparison processes: Theoretical and empirical perspectives* (pp. 259–278). Washington, DC: Hemisphere.

Goethals, G. R., & Klein, W. M. (2000). Interpreting and inventing social reality: Attributional and constructive elements in social comparison. In J. Suls & L. Wheeler (Eds.), *The handbook of social comparison: Theory and research* (pp. 23-44). New York: Plenum.

Goffman, E. (1959). *The presentation of self in everyday life*. Garden City, NY.

Gonzales, A. & Hancock, J. (2011). Mirror, mirror on my Facebook wall: Effects of exposure to Facebook on self-esteem. *Cyberpsychology, Behavior, and Social Networking, 14*(1-2), 79-83.

Gosling, S., Ko, S. J., Mannarelli, T., & Morris, M. (2002). A room with a cue: personality judgments based on offices and bedrooms. *Journal of personality and Social Psychology, 82*(3), 379.

Greitemeyer, T. (2016). Facebook and people's state self-esteem: The impact of the number of other users' Facebook friends. *Computers in Human Behavior, 59*, 182-186.

Guadagnoli, E., & Velicer, W. F. (1988). Relation to sample size to the stability of component patterns. *Psychological bulletin*, *103*(2), 265.

Haferkamp, N. & Kramer, N. (2011). Social Comparison 2.0: Examining the Effects of Online Profiles on Social-Networking Sites. *Cyberpsychology, Behavior, and Social Networking, 14*(5), 309-314.

Hakmiller, K. (1966). Threat as a determinant of downward comparison. *Journal of Experimental Social Psychology, 2*(1), 32–39.

Hamburger, Y. A., & Ben-Artzi, E. (2000). The relationship between extraversion and neuroticism and the different uses of the Internet. *Computers in human behavior*, *16*(4), 441-449.

Hamburger, Y.A. & Ben–Artzi, E. (2000). The relationship between extraversion and neuroticism and the different uses of the Internet. *Computers in Human Behavior*, 16, 441–9.

Harbaugh, E. R. (2010). The effect of personality styles (level of introversion–extroversion) on social media use. *The Elon Journal of Undergraduate Research in Communications*, *1*(2), 70-86.

Haworth, J., Young, C., & Thornton, E. (2009). The effects of an 'exercise and education' programme on exercise self-efficacy and levels of independent activity in adults with acquired neurological pathologies: An exploratory, randomized study. *Clinical Rehabilitation, 23*(4), 371-383.

Heatherton, T. & Polivy, J. (1991). Development and validation of a scale for measuring state self-esteem. *Journal of Personality and Social psychology, 60*(6), 895.

Heatherton, T. F. & Wyland, C.L. (2003) Assessing self-esteem. In S. J. Lopez & C. R. Synder (Eds.) Positive Psychology Assessment. Washington DC: American Psychological Association.

Heatherton, T. F., & Ambady, N. (1993). Self-esteem, self-prediction, and living up to commitments. In R. Baumeister (Ed.), *Self-esteem. The puzzle of low self-regard* (pp. 131-145). New York: Plenum.

Higgins, E. (1987). Self-Discrepancy: A Theory Relating Self and Affect. *Psychological Review 94*(3), pp. 319-340.

Hoffman, P., Festinger, L., & Lawrence, D. (1954). Tendencies Toward Comparability in Competitive Bargaining. *Human Relations, 7*(2), 2-2. Cited in: Schachter, S. & Gazzaniga, M. (1990). *Extending Psychological Frontiers*. Russell Sage Foundation.

Hogan, R. (1983). A socioanalytic theory of personality. In M. Page & R. Dienstbier (Eds.), *Nebraska Symposium on Motivation* (pp. 55-89). Lincoln: University of Nebraska Press.

Huguet, P., Dumas, F., Monteil, J. M., & Genestoux, N. (2001). Social comparison choices in the classroom: Further evidence for students' upward comparison tendency and its beneficial impact on performance. *European Journal of Social Psychology, 31*(5), 557-578.

Hum, N., Chamberlin, P., Hambright, B., Portwood, A., Schat, A., & Bevan, J. (2011). A picture is worth a thousand words: A content analysis of Facebook profile photographs. *Computers in Human Behavior, 27*(5), 1828-1833.

Hutcheson, G. & Sofroniou, N. (1999). The Multivariate Social Scientist: Introducing Statistics using Generalised Linear Models. Cited In Field, A. (2009). *Discovering statistics using SPSS.* Sage publications.

Iacobucci, D., Posavac, S. S., Kardes, F. R., Schneider, M., & Popovich, D. (2015). The median split: Robust, refined, and revived. *Journal of Consumer Psychology 25*(4), 690–704.

James, W. (1890). *The Principles of Psychology*. London; MacMillan.

Jelenchick, L. A., Eickhoff, J. C., & Moreno, M. A. (2013). "Facebook depression?" Social networking site use and depression in older adolescents. *Journal of Adolescent Health*, *52*(1), 128-130.

Joinson, A & Paine, C. (2007). Self-disclosure, privacy and the Internet. In A. Joinson, K. McKenna, T. Postmes & U. Reips (Eds). *The Oxford handbook of Internet psychology* (pp. 237-252). Oxford University Press.

Joinson, A. (2004). Self-esteem, interpersonal risk, and preference for e-mail to face-to-face communication. *CyberPsychology & Behavior 7*(4), 472-478.

Jones, E., Rock, L., Shaver, K., Goethals, G., & Ward, L. (1968). Pattern of performance and ability attribution: An unexpected primacy effect. *Journal of Personality and Social Psychology, 10*(4), 317-334.

Jones, S. (1973). Self-and interpersonal evaluations: esteem theories versus consistency theories. *Psychological Bulletin, 79*(3), 185-199.

Kaplan, A. & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons, 53*(1), 59-68.

Katz, E., Blumler, J. G., & Gurevitch, M. (1974). Utilization of mass communication by the individual. In J. G. Blumler & E. Katz (Eds). *The uses of mass communications: Current perspectives on gratifications research* (pp. 19-32). Beverly Hills, CA: Sage.

Katz, J. E., & Crocker, E. T. (2015). Selfies| Selfies and Photo Messaging as Visual Conversation: Reports from the United States, United Kingdom and China. *International Journal of Communication*, *9*, 1861–1872.

Kiesler, S., Siegel, J., & McGuire, T. (1984). Social psychological aspects of computer-mediated communication. *American Psychologist, 39*(10), 1123-1134.

Kim, J., & Lee, J. E. R. (2011). The Facebook paths to happiness: Effects of the number of Facebook friends and self-presentation on subjective well-being. *CyberPsychology, Behavior, and Social Networking*, *14*(6), 359-364.

Kirkwood, B. R. (1988). *Essentials of medical statistics*. Oxford: Blackwell.

Knapp, F. & Heidingsfelder, M. (2001): Drop-out analysis: Effects of the survey design. In U. Reips, & M. Bosnjak (Eds.). *Dimensions of Internet Science* (pp. 221-230). Pabst Science Publishers, Lengerich.

Krämer, N. & Winter, S. (2008). Impression management 2.0: The relationship of self-esteem, extraversion, self-efficacy, and self-presentation within social networking sites. *Journal of Media Psychology, 20*(3), 106-116.

Krombholz, K., Merkl, D., & Weippl, E. (2012). Fake identities in social media: A case study on the sustainability of the Facebook business model. *Journal of Service Science Research, 4*(2), 175-212.

Kruglanski, A. & Mayseless, O. (1990). Classic and current social comparison research: Expanding the perspective. *Psychological Bulletin, 108*(2), 195-208.

Krumpal, I. (2013). Determinants of social desirability bias in sensitive surveys: a literature review. *Quality & Quantity, 47*(4), 2025-2047.

Leary, M. & Kowalski, R. (1990). Impression management: A literature review and two-component model. *Psychological Bulletin, 107*(1), 34-47.

Leary, M. & MacDonald, G. (2003). Individual differences in self-esteem: A review and theoretical integration. In M. Leary & J. Tangney (Eds.). *Handbook of self and identity* (pp. 401– 418). New York, NY: Guilford Press.

Leary, M. R. (1995). *Self-presentation: Impression management and interpersonal behavior.* Boulder: Westview.

Leary, M. R. (2001). The self we know, the self we show, self-esteem, self-presentation, and the maintenance of interpersonal relationships. In G. J. O. Fletcher & M. S. Clark (Eds.), *Blackwell handbook of social psychology: Interpersonal processes* (pp. 457–477). Oxford, UK: Blackwell

Leary, M. R., Koch, E. J., & Hechenbleikner, N. R. (2001). Emotional responses to interpersonal rejection. In M. R. Leary (Ed.), *Interpersonal rejection* (pp. 145-188). New York: Oxford University Press

Leary, M. Tambor, E., Terdal, S. & Downs, D. (1995). Self-esteem as an interpersonal monitor: The sociometer hypothesis. *Journal of Personality and Social Psychology, 68*(3), 518–530.

Leary. M. R., & Downs, D. (1995). Interpersonal functions of the self-esteem motive: The self-esteem system as a sociometer. In M. Kernis (Ed.). *Efficacy, agency, and self-esteem* (pp. 123-144). New York: Plenum.

Lee, J., Moore, D., Park, E., & Park, S. (2012). Who wants to be "friend-rich"? Social compensatory friending on Facebook and the moderating role of public self-consciousness. *Computers in Human Behavior, 28*(3), 1036-1043.

Lee, S. (2014). How do people compare themselves with others on social network sites?: The case of Facebook. *Computers in Human Behavior, 32*(1), 253-260.

Lee, S., Quigley, B., Nesler, M., Corbett, A., & Tedeschi, J. (1999). Development of a self-presentation tactics scale*. Personality and Individual Differences, 26*(4), 701–722.

Leonardelli, G., Lakin, J. & and Arkin, R. (2007). A regulatory focus model of self-evaluation. *Journal of Experimental and Social Psychology 43*(6), 1002-1009.

Lewallen, J., & Behm-Morawitz, E. (2016). Pinterest or thinterest?: Social comparison and body image on social media. *Social Media+ Society, 2*(1), 1-9

. Retrieved from http://journals.sagepub.com/doi/pdf/10.1177/2056305116640559

Lewandowski, G., Nardone, N., & Raines, A. (2010). The role of self-concept clarity in relationship quality. *Self and Identity*, *9*(4), 416-433.

Li, C. (2014). A tale of two social networking sites: How the use of Facebook and Renren influences Chinese consumers' attitudes toward product packages with different cultural symbols. *Computers in Human Behavior, 32*, 162-170.

Light, A. (2018). Self concept clarity, self regulation, and psychological well-being. In J.Lodi-Smith & K. G.DeMarree (Eds.), *Self-Concept Clarity Perspectives on Assessment, Research, and Applications* (pp 177-195). New York: Springer.

Link, B. G., Struening, E. L., Neese-Todd, S., Asmussen, S., & Phelan, J. C. (2001). Stigma as a barrier to recovery: The consequences of stigma for the self-esteem of people with mental illnesses. *Psychiatric Services*, *52*(12), 1621-1626.

Liu, Z., Min, Q., Zhai, Q., & Smyth, R. (2016). Self-disclosure in Chinese micro-blogging: A social exchange theory perspective. *Information & Management, 53*(1), 53-63.

Livingstone, S. (2003). Children's use of the internet: Reflections on the emerging research agenda. *New media & society, 5*(2), 147-166.

Lockwood, P., & Kunda, Z. (1997). Superstars and me: Predicting the impact of role models on the self. *Journal of Personality and Social Psychology, 73*(1), 91–103.

Luke, M. A & Stopa, L. (2009). Psychological theories of the self and their application to clinical disorders. In: L. Stopa (Ed.). *Imagery and the threatened self: perspectives on mental imagery and the self in cognitive therapy* (pp. 15-64). Routledge, Oxford, UK.

Lunnay, B., Borlagdan, J., McNaughton, D., & Ward, P. (2015). Ethical use of social media to facilitate qualitative research. *Qualitative Health Research, 25*(1), 99-109.

Lup, K., Trub, L., & Rosenthal, L. (2015). Instagram# instasad?: exploring associations among instagram use, depressive symptoms, negative social comparison, and strangers followed. *Cyberpsychology, Behavior, and Social Networking, 18*(5), 247-252.

MacCallum, R., Zhang, S., Preacher, K., & Rucker, D. (2002). On the practice of dichotomization of quantitative variables. *Psychological Methods, 7*(1), 19–40.

Manago, A. M. (2014). Identity development in the digital age: The case of social networking sites. In K.C. McLean & M. Syed (Eds.). *The Oxford handbook of Identity Development* (pp. 508-524). New York: Oxford University Press.

Martino, O. (2008). *The role of biological rhythms and blood glucose levels in maintaining a positive mood state* (PhD thesis). University of Wolverhampton, Wolverhampton, UK.

Martino, O.I. & Morris, N. (2003). Drinking glucose improves mood at the beginning of the working day. In P. McCabe (Ed.), Contemporary Ergonomics 2003 (pp.226-231). London: Taylor & Francis.

Marwick, A. & boyd, d. (2010). I tweet honestly, I tweet passionately: Twitter users, context collapse, and the imagined audience. *New Media & Society, 13*, 114–133.

Matsuba, M. (2006). Searching for self and relationships online. *CyberPsychology & Behavior, 9*(3), 275-284.

Matthews, G., Jones, D., & Chamberlain, A. (1990). Refining the measurement of mood: The UWIST mood adjective checklist. *British Journal of Psychology, 81*(1), 17-42.

McClelland, G. H., Lynch, J. G., Jr., Irwin, J. R., Spiller, S. A., & Fitzsimons, G. J. (2015). Median splits, type II errors, and false positive consumer psychology: Don't fight the power. *Journal of Consumer Psychology, 25*(4), 679–689.

McKenna, K. & Bargh, J. (1998). Coming out in the age of the Internet: Identity" demarginalization" through virtual group participation. *Journal of Personality and Social Psychology, 75*(3), 681-694.

McKenna, K. & Bargh, J. (2000). Plan 9 from cyberspace: The implications of the Internet for personality and social psychology. *Personality and Social Psychology Review, 4*(1), 57-75.

McKenna, K. Y. A. (2007). Through the Internet looking glass: Expressing and validating the true self. In A. Johnson, K. McKenna, T. Postmes, & U. D. Reips (Eds.). *The Oxford Handbook of Internet Psychology* (pp. 205–221). Oxford, UK: Oxford University Press.

McKenna, K., Green, A., & Gleason, M. (2002). Relationship formation on the Internet: What's the big attraction?. *Journal of Social Issues, 58*(1), 9-31.

McQueen, A., & Klein, W. M. (2006). Experimental manipulations of self-affirmation: A systematic review. *Self and Identity*, *5*(4), 289-354.

Mead, G. (1934). *Mind Self and Society.* University of Chicago Press: Chicago.

Mehdizadeh, S. (2010). Self-presentation 2.0: Narcissism and self-esteem on Facebook. *Cyberpsychology, Behavior, and Social Networking, 13*(4), 357-364.

Mittal, S., Gupta, N., Dewan, P., & Kumaraguru, P. (2013). *The pin-bang theory: Discovering the pinterest world.* Retrieved from https://arxiv.org/pdf/1307.4952.pdf

Moningka, C. (2015). The use of social media in Jakarta. Unpublished research. Jakarta: Gunadarma University. Cited in Moningka, C. (2017). Self-

comparison: the self in digital world. In M. Wright (Ed). *Identity, sexuality and relationships among emerging adults in the digital age* (pp.18-27). IGI Global.

Moore, K., & McElroy, J. C. (2012). The influence of personality on Facebook usage, wall postings, and regret. *Computers in Human Behavior, 28*(1), 267-274.

Morris, N. (2002). The effects of lavender (Lavendula angustifolium) baths on psychological well-being: two exploratory randomised control trials. *Complementary Therapies in Medicine, 10*(4), 223-228.

Morris, N. (2008). The effects of a mid-morning chocolate snack on mood and glucose tolerance. In P.D. Bust (Ed.), Contemporary Ergonomics 2008. London: Taylor & Francis.

Morris, N., Toms, M., Easthope, Y., & Biddulph, J. (1998). Mood and cognition in pregnant workers. *Applied Ergonomics, 29*(5), 377-381.

Mruk, C. (2006). *Self-esteem research, theory, and practice: Toward a positive psychology of self-esteem*. Springer Publishing Company.

Mullins, J. (2014). *Can Facebook make you sad*? Retrieved from http://www.bbc.com/future/story/20140206-is-Facebook-bad-for-you

Mussweiler, T., Epstude, K. & Ruter, K. (2005). The knife that cuts both ways: Comparison processes in social perception. In M. Alicke, D. Dunning & J. Krueger (Eds.). *The self in social judgment* (pp. 109–130). New York: Psychology Press.

Mussweiler,T., Ruter, K. & Epstude, K. (2004). The man who wasn't there: Subliminal social comparison standards influence self-evaluation. *Journal of Experimental Social Psychology, 40*, 689–696.

Nadkarni, A., & Hofmann, S. G. (2012). Why do people use Facebook?. *Personality and Individual Differences*, *52*(3), 243-249

Niedenthal, P., Cantor, N., & Kihlstrom, J. (1985). Self to prototype matching: A strategy for social decision-making. *Journal of Personality and Social Psychology, 48*(3), 575-584.

Nunnally, J. (1978). *Psychometric theory (2nd ed.).* New York: McGraw-Hill.

Ofcom (2017). *Children and parents: media use and attitudes report*. Retrieved from

Office for National Statistics (2016). *Internet access – households and individuals: 2016*. Retrieved from https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeInternetandsocialmediausage/bulletins/Internetaccesshouseholdsandindividuals/2016

Ong, E. Y., Ang, R. P., Ho, J. C., Lim, J. C., Goh, D. H., Lee, C. S., & Chua, A. Y. (2011). Narcissism, extraversion and adolescents' self-presentation on Facebook. *Personality and Individual Differences*, *50*(2), 180-185.

Onwuegbuzie, A. J., & Leech, N. L. (2004). Post hoc power: A concept whose time has come. *Understanding statistics, 3*(4), 201-230.

Orchard, L. & Fullwood, C. (2010). Current perspectives on personality and Internet use. *Social Science Computer Review, 28*(2), 155-169.

Orchard, L. J., Fullwood, C., Galbraith, N., & Morris, N. (2014). Individual differences as predictors of social networking. *Journal of Computer-Mediated Communication*, *19*(3), 388-402.

Orchard, L., Fullwood, C., Morris, N., & Galbraith, N. (2015). Investigating the Facebook experience through Q Methodology: Collective investment and a 'Borg'mentality. *New Media & Society, 17*(9), 1547-1565.

O'Reilly, T. (2007). What is Web 2.0: Design patterns and business models for the next generation of software. *Communications & strategies*, *1*, 17-37. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1008839

Oyserman, D. & Markus, H. (1998). Self as social representation. In U. Flick, (Ed.). *The Psychology of the Social* (pp. 107-125). New York, NY: Cambridge University Press.

Oyserman, D. (2004) Self-concept and identity. In M. Brewer & M. Hewstone (eds.). *Self and social identity* (pp 5–24). Blackwell, Oxford.

Pallant, J. (2016). *SPSS survival manual: a step by step guide to data analysis using IBM SPSS, 6th edn*. Open University Press.

Peck, R., & Devore, J. L. (2011). *Statistics: The exploration & analysis of data*. Cengage Learning.

Peluchette, J., & Karl, K. (2010). Examining students' intended image on Facebook: "What were they thinking?!". *Journal of Education for Business, 85*(1), 30-37.

Pempek, T., Yermolayeva, Y. & Calvert, S. (2009). College students' social networking experiences on Facebook. *Journal of Applied Developmental Psychology, 30*(3), 227-238.

Pennebaker J, King, L. (1999). Linguistic styles: language use as an individual difference. *Journal of Personality and Social Psychology 77*(6), 1296-1312.

Pennebaker, J. (2011). *The Secret Life of Pronouns. What Our Words Say About Us*. Bloomsbury Press.

Pennebaker, J. Chung, C. Ireland, M., Gonzales, A., & Booth, R. (2007). *The Development and Psychometric Properties of LIWC 2007.* Retrieved from https://www.researchgate.net/publication/228650445_The_Development_and_Psychometric_Properties_of_LIWC2007

Pennebaker, J. W., Mehl, M. R., & Niederhoffer, K. G. (2003). Psychological aspects of natural language use: Our words, our selves. *Annual Review of Psychology*, *54*(1), 547-577.

Pennebaker, J., Francis, M. & Booth, R. (2007). *Linguistic inquiry and word count (LIWC): LIWC2007.* Mahwah: Erlbaum.

Pennebaker, J., Francis, M., & Booth, R. (2001). *Linguistic inquiry and word count: LIWC 2001.* Mahway: Lawrence Erlbaum Associates.

Perneger, T. V. (1998). What's wrong with Bonferroni adjustments. *BMJ: British Medical Journal*, *316*(7139), 1236.

Pettijohn II, T. F., LaPiene, K. E., Pettijohn, T. F., & Horting, A. L. (2012). Relationships between Facebook intensity, friendship contingent self-esteem, and personality in US college students. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, *6*(1).

Pew Research Centre (2016). *Social Media update*. Retrieved from http://www.pewInternet.org/2016/11/11/social-media-update-2016/pi_2016-11-11_social-media-update_0-01/

Pinkus, R., Lockwood, P., Schimmack, U., & Fournier, M. (2008). For better and for worse: everyday social comparisons between romantic partners. *Journal of Personality and Social Psychology, 95*(5), 1180-201.

Poley, M. & Luo, S. (2012). Social compensation or rich-get-richer? The role of social competence in college students' use of the Internet to find a partner. *Computers in Human Behavior, 28*(2), 414-419.

Power, A., & Kirwan, G. (2013). *Cyberpsychology and new media: a thematic reader.* Psychology Press.

Przybylski, A., Murayama, K., DeHaan, C., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior, 29*(4), 1841-1848.

Qiu, L., Lu, J., Yang, S., Qu, W., & Zhu, T. (2015). What does your selfie say about you?. *Computers in Human Behavior*, *52*, 443-449.

Raskin, R. & Terry, H. (1988). "A principal-components analysis of the Narcissistic Personality Inventory and further evidence of its construct validity". *Journal of Personality and Social Psychology, 54*(5), 890-902.

Renaud, J. M., & McConnell, A. R. (2007). Wanting to be better but thinking you can't: Implicit theories of personality moderate the impact of self-discrepancies on self-esteem. *Self and Identity, 6*(1), 41-50.

Rosenberg, J., & Egbert, N. (2011). Online impression management: Personality traits and concerns for secondary goals as predictors of self-presentation tactics on Facebook. *Journal of Computer-Mediated Communication, 17*(1), 1–18.

Rosenberg, M. (1965). *Society and the adolescent self-image.* Princeton, NJ: Princeton University Press.

Rosenberg, M. (1979). *Conceiving the self.* New York: Basic Books.

Rosenberg, M., & Owens, T. (2001). Low self-esteem people: A collective portrait. In T. Owens. S. Stryker, & N. Goodmanm (Eds.). *Extending self-esteem theory and research* (pp. 400-436). New York: Cambridge University Press.

Rucker, D., McShane, B., & Preacher, K. (2015). A researcher's guide to regression, discretization, and median splits of continuous variables. *Journal of Consumer Psychology, 25*(4), 666-678.

Sadler, M., Hunger, J., & Miller, C. (2010). Personality and impression management: Mapping the Multidimensional Personality Questionnaire onto 12 self-presentation tactics. *Personality and Individual Differences, 48*(5), 623-628.

Sagioglou, C., & Greitemeyer, T. (2014). Facebook's emotional consequences: Why Facebook causes a decrease in mood and why people still use it. *Computers in Human Behavior, 35*, 359-363.

Salovey, P., & Rothman, A. J. (Eds.). (2003). *Social psychology of health: Key readings*. Psychology press.

Schlenker, B. R. (1980). *Impression management: The self-concept, social identity, and interpersonal relations.* Monterey, CA: Brooks/Cole.

Schlenker, B. R. (1985). Identity and self-identification. In B. R. Schlenker (Ed.). *The self and social life* (pp. 65-99). New York: McGraw-Hill.

Schwartz, H. A., Eichstaedt, J. C., Kern, M. L., Dziurzynski, L., Ramones, S. M., Agrawal, M. & Ungar, L. H. (2013). Personality, gender, and age in the language of social media: The open-vocabulary approach. *PloS one*, *8*(9). Retrieved from http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0073791

Sears, D. (1986). College sophomores in the lab: Influences of a narrow database on psychology's view of human nature. *Journal of Personality and Social Psychology 51*, 513-530.

Sebastian, C., Burnett, S., & Blakemore, S. (2008). Development of the self-concept during adolescence. *Trends in Cognitive Science 12*(11), 441-446.

Sedikides, C., & Strube, M. (1997). Self-evaluation: To thine own self be good, to thine own self be sure, to thine own self be true, and to thine own self be better. In M. P. Zanna (Ed.). *Advances in Experimental Social Psychology* (pp. 209–269). New York, NY: Academic Press.

Seligman, M. (1981). A learned helplessness point of view. In L. P. Rehm (Ed.), *Behavior therapy for depression: Present status and future directions* (pp. 123-141). New York: Academic Press.

Semin, G. & Fiedler, K. (1988). The cognitive functions of linguistic categories in describing persons: Social cognition and language. *Journal of Personality and Social Psychology, 54*(4), 558-568.

Setterlund, M. & Niedenthal, P. (1993). "Who am I? Why am I here?": Self-esteem, self- clarity, and prototype-matching. *Journal of Personality and Social Psychology, 65*(4), 769-780.

Shavelson, R., Hubner, J., & Stanton, G. (1976). Self-concept: Validation of construct interpretations. *Review of Educational Research, 46*(3), 407-441.

Sherman, D., & Hartson, K. (2011). Reconciling self-protection with self-improvement: Self-affirmation theory. In M. Alicke & C. Sedikides (Eds.). *The handbook of self-enhancement and self-protection* (pp. 128-154). New York, NY: Guilford.

Showers, C., & Zeigler-Hill, V. (2012). Organization of self-knowledge: Features, functions, and flexibility. In M. R. Leary & J. Tangney (Eds.). *Handbook of self and identity* (pp. 105-123). New York: Guilford.

Skues, J., Williams, B., & Wise, L. (2012). The effects of personality traits, self-esteem, loneliness, and narcissism on Facebook use among university students. *Computers in Human Behavior, 28*(6), 2414-2419.

Smock, A., Ellison, N., Lampe, C., & Wohn, D. (2011). Facebook as a toolkit: A uses and gratification approach to unbundling feature use. *Computers in Human Behavior, 27*(6), 2322-2329.

Spradlin, A., Cuttler, C., Bunce, J. P., & Carrier, L. M. (2017). #Connected: Facebook May Facilitate Face-to-Face Relationships for Introverts. *Psychology of Popular Media Culture.* Advance online publication.

Statisca, (2016). *Global social networks ranked by number of users 2016.* Retrieved from http://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/

Statista (2017). *Social Media Statistics & Facts.* Retrieved from https://www.statista.com/topics/1164/social-networks/

Statista (2017). *What are you looking for when using dating websites or apps?* Retrieved from https://www.statista.com/statistics/705347/reasons-for-using-online-dating-site-and-app-in-us/

Steele, C. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.). *Advances in Experimental Social Psychology* (pp. 261-302). San Diego, CA: Academic Press.

Steele, C. M., Spencer, S. J., & Lynch, M. (1993). Self-image resilience and dissonance: the role of affirmational resources. *Journal of Personality and Social Psychology*, *64*(6), 885-896.

Stephenson-Abetz, J., & Holman, A. (2012). Home is where the heart is: Facebook and the negotiation of "old" and "new" during the transition to college. *Western Journal of Communication*, *76*(2), 175-193.

Stevens, J. (1996). *Applied multivariate statistics for the social sciences 3rd edition.* Mwahwah, NJ: Lawrence Erlbaum.

Stopfer, J., Egloff, B., Nestler, S., & Back, M. (2013). Being popular in online social networks: How agentic, communal, and creativity traits relate to judgments of status and liking. *Journal of Research in Personality, 47*(5), 592-598.

Stopfer, J., Egloff, B., Nestler, S., & Back, M. (2014). Personality expression and impression formation in online social networks: An integrative approach to understanding the processes of accuracy, impression management and meta-accuracy. *European Journal of Personality, 28*(1), 73-94.

Swann, W. B., Jr. (1983). Self-verification: Bringing social reality into harmony with the self. In J. Suls & A. G. Greenwald (Eds.). *Social psychological perspectives on the self* (pp. 33-66). Hillsdale, NJ: Erlbaum.

Swann, W. B., Jr. (1990). To be adored or to be known : The interplay of self-enhancement and self-verification. In R. M. Sorrentino & E. T. Higgins (Eds.) *Foundations of Social Behavior* (pp. 408-448). New York: Guilford.

Swann, W. B., Jr. (2011). Self-verification theory. In P. Van Lang, A. Kruglanski, & E. T. Higgins (Eds.). *Handbook of theories of social psychology* (pp. 23– 42). London, England: Sage.

Swann, W. B., Jr. (2012). Self-verification theory. In P. Van Lange, A. Kruglanski, & E.T. Higgins (Eds.) *Handbook of Theories of Social Psychology* (pp. 23-42). Sage: London.

Swann, W. B., Jr. Chang-Schneider, C., & Angulo, S. (2007). Self-verification in relationships as an adaptive process. In J. Wood, A. Tesser, & J. Holmes (Eds.). *The Self and Social Relationships* (pp. 49–72). New York: Psychology Press.

Swann, W. B., Jr. Chang-Schneider, C., & Angulo, S. (2007). Self-verification in relationships as an adaptive process. In J. Wood, A. Tesser, & J. Holmes (Eds.). *The Self and Social Relationships* (pp. 49–72). New York: Psychology Press.

Sweeney, P. & McFarlin, D. (2005), Wage comparisons with similar and dissimilar others. *Journal of Occupational and Organisational Psychology 78,*113–131.

Tabachnick, B. G. & Fidell, L. S. (2012). *Using Multivariate Statistics 6th (sixth) Edition.* Boston : Pearson Education.

Tausczik, Y. R., & Pennebaker, J. W. (2010). The psychological meaning of words: LIWC and computerized text analysis methods. *Journal of Language and Social Psychology*, *29*(1), 24-54.

Taylor, S., & Brown, J. (1988). Illusion and well-being: a social psychological perspective on mental health. *Psychological Bulletin, 103*(2), 193-210.

Taylor, S., Wayment, H. & Carrillo, M. (1995). Social comparison and self-regulation. In R.M. Sorrentino & E.T. Higgins (Eds.) *Handbook of motivation and cognition* (pp. 3-27) New York: Guilford Press.

Taylor, S., Wayment, H., Neter, E. & Woo, G. (1994). The self in transition. In P.Bertelson, P. Eelen & G. d'Ydewalle (Eds.). *International perspectives on psychological science: Leading themes* (pp. 181-195). London: Erlbaum.

Taylor, S., Wood, J., & Lichtman, R. (1983). It could be worse: Selective evaluation as a response to victimization. *Journal of Social Issues, 39*(2), 19-40.

Tazghini, S. & Siedlecki, K. (2013). A mixed method approach to examining Facebook use and its relationship to self-esteem. *Computers in Human Behavior 29*(3), 827-832.

Thibaut, J. W., & Kelley, H. H. (1959). *The social psychology of groups.* New York: Wiley.

Thornton, D. A., & Arrowood, A. J. (1966). Self-evaluation, self-enhancement, and the locus of social comparison. *Journal of Experimental Social Psychology*, *1*, 40-48.

Toma, C. &. Hancock, J. (2013). Self-affirmation underlies Facebook use. *Personality and Social Psychology Bulletin 39*(3), 321-331.

Tomas, J. M., & Oliver, A. (1999). Rosenberg's self-esteem scale: Two factors or method effects. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 84-98.

Tong, S., Van Der Heide, B., Langwell, L., & Walther, J. (2008). Too much of a good thing? The relationship between number of friends and interpersonal impressions on Facebook. *Journal of Computer-Mediated Communication, 13*(3), 531-549.

Tourangeau, R., Conrad, F., & Couper, M. (2013). *The science of web surveys.* Oxford University Press.

Trzesniewski, K. H., Donnellan, M. B., & Robins, R. W. (2003). Stability of self-esteem across the life span. *Journal of Personality and Social Psychology, 84*, 205-220.

Underwood, M., Rosen, L., More, D., Ehrenreich, S., & Gentsch, J. (2012). The BlackBerry project: capturing the content of adolescents' text messaging. *Developmental Psychology, 48*(2), 295-302.

Utz, S. (2015). The function of self-disclosure on social network sites: Not only intimate, but also positive and entertaining self-disclosures increase the feeling of connection. *Computers in Human Behavior, 45*, 1-10.

Utz, S., & Beukeboom, C. (2011). The role of social network sites in romantic relationships: Effects on jealousy and relationship happiness. *Journal of Computer-Mediated Communication, 16*(4), 511-527.

Valkenburg P., Peter, J. (2008). Adolescents' identity experiments on the Internet: Consequences for social competence and self-concept unity. *Communication Research, 35*(2), 208-231.

Valkenburg, P. & Peter, J. (2007). Online communication and adolescent well-being: Testing the stimulation versus the displacement hypothesis. *Journal of Computer-Mediated Communication, 12*(4), 1169-1182.

Valkenburg, P. M., & Peter, J. (2011). Online communication among adolescents: An integrated model of its attraction, opportunities, and risks. *Journal of Adolescent Health, 48*(2), 121-127.

Valkenburg, P., Peter, J., & Schouten, A. (2006). Friend networking sites and their relationship to adolescents' well-being and social self-esteem. *CyberPsychology & Behavior, 9*(5), 584-590.

Valkenburg, P., Schouten, A., & Peter, J. (2005). Adolescents' identity experiments on the Internet. *New media & society, 7*(3), 383-402.

Van Der Heide, B., D'Angelo, J., & Schumaker, E. (2012). The effects of verbal versus photographic self-presentation on impression formation in Facebook. Journal of Communication, *62*(1), 98-116.

Vandevelde, L., & Miyahara, M. (2005). Impact of group rejections from a physical activity on physical self-esteem among university students. *Social Psychology of Education*, *8*(1), 65-81.

Vartanian, L., & Dey, S. (2013). Self-concept clarity, thin-ideal internalization, and appearance-related social comparison as predictors of body dissatisfaction. *Body Image, 10*(4), 495-500.

Vazire, S., & Gosling, S. (2004). e-Perceptions: personality impressions based on personal websites. *Journal of Personality and Social Psychology, 87*(1), 123-132.

Vickery, G., & Wunsch-Vincent, S. (2007). *Participative web and user-created content: Web 2.0 wikis and social networking.* Organization for Economic Cooperation and Development (OECD). Paris, France.

Vitak, J., & Ellison, N. (2012). 'There's a network out there you might as well tap': Exploring the benefits of and barriers to exchanging informational and support-based resources on Facebook. *New Media & Society, 15*(2), 243-259.

Vogel, E. A., Rose, J. P., Roberts, L. R., & Eckles, K. (2014). Social comparison, social media, and self-esteem. *Psychology of Popular Media Culture*, *3*(4), 206-222.

Vogel, E., Rose, J., Okdie, B., Eckles, K., & Franz, B. (2015). Who compares and despairs? The effect of social comparison orientation on social media use and its outcomes. *Personality and Individual Differences, 86*, 249-256.

Vogt, W. P., Gardner, D. C., Haeffele, L. M., & Vogt, E. R. (2014). *Selecting the right analyses for your data: Quantitative, qualitative, and mixed methods*. Guilford Publications.

Wallace, P. (2015). *The psychology of the Internet.* Cambridge University Press.

Walrave M. & Heirman W. (2010). Towards understanding the potential triggering features of technology. In S. Shariff & A. H. Churchill (Eds.). *Truths*

and myths of cyber-bullying: International perspectives on stakeholder responsibility and children's safety (pp. 28-49). New York, NY: Peter Lang.

Walther, J. (2007). Selective self-presentation in computer-mediated communication: Hyperpersonal dimensions of technology, language, and cognition. *Computers in Human Behavior, 23*(5), 2538-2557.

Walther, J. B. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research*, *23*(1), 3-43.

Walther, J. B. (2011). Theories of computer-mediated communication and interpersonal relations. In M. L. Knapp & J. A. Daly (Eds.). *The handbook of interpersonal communication* (pp. 443-479). Thousand Oaks, CA: Sage.

Walther, J., Van Der Heide, B., Hamel, L., & Shulman, H. (2009). Self-generated versus other-generated statements and impressions in computer-mediated communication a test of warranting theory using Facebook. *Communication Research, 36*(2), 229-253.

Wang, J., Jackson, L., Zhang, D. & Su, Z. (2012). The relationships among the Big Five Personality factors, self-esteem, narcissism, and sensation-seeking to Chinese University students' uses of social networking sites (SNSs). *Computers in Human Behavior, 28*(6), 2313-2319.

Want, S., & Saiphoo, A. (2017). Social comparisons with media images are cognitively inefficient even for women who say they feel pressure from the media. *Body Image, 20*, 1-6.

Want, S., Botres, A., Vahedi, Z., & Middleton, J. (2015). On the cognitive (in) efficiency of social comparisons with media images. *Sex Roles, 73*(11-12), 519-532.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063-1070.

Wayment, H. A., & Taylor, S. E. (1995). Self-evaluation processes: Motives, information use, and self-esteem. *Journal of personality*, *63*(4), 729-757.

Weisbuch, M., Ivcevic, Z., & Ambady, N. (2009). On being liked on the web and in the "real world": Consistency in first impressions across personal webpages and spontaneous behavior. *Journal of Experimental Social Psychology, 45*(3), 573-576.

Weiser, E. B. (2015). # Me: Narcissism and its facets as predictors of selfie-posting frequency. *Personality and Individual Differences*, *86*, 477-481.

Wheeler, L. (2000). Individual differences in social comparison. In J. Suls & L. Wheeler (Eds.), *Handbook of social comparison. Theory and research* (pp. 141-158). New York, NJ: Kluwer Academic/Plenum Publishers.

Wheeler, L., & Miyake, K. (1992). Social comparison in everyday life. *Journal of Personality and Social Psychology, 62*(5), 760-773.

Whisper, (2016). *Company overview.* Retrieved from https://www.Facebook.com/WhisperApp/info/?entry_point=page_nav_about_item

White, J., Langer, E., Yariv, L., & Welch, J. (2006). Frequent social comparisons and destructive emotions and behaviors: The dark side of social comparisons. *Journal of Adult Development, 13*(1), 36-44.

Whitty, M. (2007). The art of selling one's self on an online dating site: The BAR Approach. In M. Whitty, A. Baker, & J. Inman (Eds.). *Online matchmaking* (pp. 57-69). Houndmills: Palgrave Macmillan.

Whitty, M. & Carr, A. (2006). *Cyberspace romance: The psychology of online relationships.* Basingstoke: Palgrave Macmillan.

Wickel, T. M. (2015). Narcissism and social networking sites: the act of taking selfies. *Elon Journal of Undergraduate Research in Communications*, *6*(1). Retrieved from https://www.elon.edu/docs/e-web/academics/communications/research/vol6no1/01WickelEJSpring15.pdf

Willis, J., & Todorov, A. (2006). First impressions making up your mind after a 100-ms exposure to a face. *Psychological Science, 17*(7), 592-598.

Wills, T. (1981). Downward comparison principles in social psychology. *Psychological Bulletin, 90*(2), 245-271.

Wilson, R.., Gosling, S., & Graham, L. (2012). A review of Facebook research in the social sciences. *Perspectives on Psychological Science, 7*(3), 203-220.

Wojciszke, B. (1994). Multiple meanings of behaviour: Construing actions in terms of competence and morality. *Journal of Personality and Social Psychology, 67*(2), 222–232.

Wojciszke, B., Baryla, W., Parzuchowski, M., Szymkow, A., & Abele, A. E. (2011). Self-esteem is dominated by agentic over communal information. *European Journal of Social Psychology*, *41*(5), 617-627.

Wood, J. (1989). Theory and research concerning social comparisons of personal attributes. *Psychological Bulletin, 106*(2), 231-248.

Wood, J. V. & Taylor, K. L. (1991). Serving self-relevant goals through social comparison. In J. Suls & T. A. Wills (Eds.), *Social comparison: Contemporary theory and research* (pp. 23-49). Hillsdale, NJ: Erlbaum.

Wood, J., Taylor, S., & Lichtman, R. (1985). Social comparison in adjustment to breast cancer. *Journal of Personality and Social Psychology, 49*(5), 1169–1183.

Wright, R. (2001). Self-certainty and self-esteem. In T. J. Owens, S. Stryker, & N. Goodman (Eds.). *Extending self-esteem theory and research: Sociological and psychological currents* (pp. 101–134). New York: Cambridge University Press.

Yang, C. C., & Brown, B. B. (2013). Motives for using Facebook, patterns of Facebook activities, and late adolescents' social adjustment to college. *Journal of Youth and Adolescence*, *42*(3), 403-416.

Zhao, S., Grasmuck, S. & Martin, J. (2008). Identity construction on Facebook: Digital empowerment in anchored relationships. *Computers in Human Behavior 24*(5), 1816–1836

Zywica, J., & Danowski, J. (2008). The faces of Facebookers: Investigating social enhancement and social compensation hypotheses; predicting Facebook™ and offline popularity from sociability and self-esteem, and mapping the meanings of popularity with semantic networks. *Journal of Computer-Mediated Communication, 14*(1), 1-34.

Chapter 10. Appendices

10.1 Chapter 3

10.1.1 Scales

10.1.1.1 Scale for Social Comparison Orientation (INCOM, Iowa-Netherlands Comparison Orientation Scale; Gibbons & Buunk, 1999).

Most people compare themselves from time to time with others. For example, they may compare the way they feel, their opinions, their abilities, and/or their situation with those of other people. There is nothing particularly 'good' or 'bad' about this type of comparison, and some people do it more than others. We would like to find out how often you compare yourself with other people. To do that we would like to ask you to indicate how much you agree with each statement below.

1. I often compare myself with others with respect to what I have accomplished in life

   1. I disagree strongly 2. I disagree 3. I neither agree nor disagree 4. I agree 5.I agree strongly

2. If I want to learn more about something, I try to find out what others think about it

   1. I disagree strongly 2. I disagree 3. I neither agree nor disagree 4. I agree 5.I agree strongly

3. I always pay a lot of attention to how I do things compared with how others do things

   1. I disagree strongly 2. I disagree 3. I neither agree nor disagree 4. I agree 5.I agree strongly

4. I often compare how my loved ones (boy or girlfriend, family members, etc.) are doing with how others are doing

   1. I disagree strongly 2. I disagree 3. I neither agree nor disagree 4. I agree 5.I agree strongly

5. I always like to know what others in a similar situation would do

1. I disagree strongly 2. I disagree 3. I neither agree nor disagree 4. I agree 5.I agree strongly

6. I am not the type of person who compares often with others

1. I disagree strongly 2. I disagree 3. I neither agree nor disagree 4. I agree 5.I agree strongly

7. If I want to find out how well I have done something, I compare what I have done with how others have done

1. I disagree strongly 2. I disagree 3. I neither agree nor disagree 4. I agree 5.I agree strongly

8. I often try to find out what others think who face similar problems as I face

1. I disagree strongly 2. I disagree 3. I neither agree nor disagree 4. I agree 5.I agree strongly

9. I often like to talk with others about mutual opinions and experiences

1. I disagree strongly 2. I disagree 3. I neither agree nor disagree 4. I agree 5.I agree strongly

10. I never consider my situation in life relative to that of other people

1. I disagree strongly 2. I disagree 3. I neither agree nor disagree 4. I agree 5.I agree strongly

11. I often compare how I am doing socially (e.g., social skills, popularity) with other people

1. I disagree strongly 2. I disagree 3. I neither agree nor disagree 4. I agree 5.I agree strongly

10.1.1.2 Self-Esteem Scale (Rosenberg, 1965)

Instructions: Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle **SA**. If you agree with the statement, circle **A**. If you disagree, circle **D**. If you strongly disagree, circle **SD**.

1.	On the whole, I am satisfied with myself.	SA	A	D	SD
2.	At times, I think I am no good at all.	SA	A	D	SD
3.	I feel that I have a number of good qualities.	SA	A	D	SD
4.	I am able to do things as well as most other people.	SA	A	D	SD
5.	I feel I do not have much to be proud of.	SA	A	D	SD
6.	I certainly feel useless at times.	SA	A	D	SD
7.	I feel that I'm a person of worth, at least on an equal plane with others.	SA	A	D	SD
8.	I wish I could have more respect for myself.	SA	A	D	SD
9.	All in all, I am inclined to feel that I am a failure.	SA	A	D	SD
10.	I take a positive attitude toward myself.	SA	A	D	SD

10.1.1.3 Self-Concept Clarity Scale (Campbell et al, 1996).

Participant Pool Unique ID:_____

Please circle a number which best describes your response to the following questions. Please answer all questions.

My beliefs about myself often conflict with one another.

1	2	3	4	5
Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree

On one day I might have one opinion of myself and on another day I might have a different opinion.

1	2	3	4	5
Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree

I spend a lot of time wondering about what kind of person I really am.

1	2	3	4	5
Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree

Sometimes I feel that I am not really the person that I appear to be.

1	2	3	4	5
Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree

When I think about the kind of person I have been in the past, I'm not sure what I was really like.

1	2	3	4	5
Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree

I seldom experience conflict between the different aspects of my personality.

1	2	3	4	5
Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree

Sometimes I think I know other people better than I know myself.

1	2	3	4	5
Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree

My beliefs about myself seem to change very frequently.

1	2	3	4	5
Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree

If I were asked to describe my personality, my description might end up being different from one day to another day.

1	2	3	4	5
Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree

Even if I wanted to, I don't think I could tell someone what I'm really like.

1	2	3	4	5
Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree

In general, I have a clear sense of who I am and what I am.

1	2	3	4	5
Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree

It is often hard for me to make up my mind about things because I don't really know what I want.

1	2	3	4	5
Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree

10.1.1.4 Facebook Intensity (FBI) Ellison, Steinfield & Lampe, 2007)

INSTRUCTIONS: this survey intends to find out your opinions about Facebook and the ways in which you use it.

For questions 1-6, on a scale of 1 (strongly disagree) to 5 (strongly agree) please select the appropriate number that best describes how you feel about Facebook. For the final two questions fill in the blanks.

1. Facebook is part of my everyday activity

1	2	3	4	5
strongly disagree	disagree	neither agree nor disagree	agree	strongly agree

2. I am proud to tell people I'm on Facebook

1	2	3	4	5
strongly disagree	disagree	neither agree nor disagree	agree	strongly agree

3. Facebook has become part of my daily routine

1	2	3	4	5
strongly disagree	disagree	neither agree nor disagree	agree	strongly agree

4. I feel out of touch when I haven't logged onto Facebook for a while

1	2	3	4	5
strongly disagree	disagree	neither agree nor disagree	agree	strongly agree

5. I feel I am part of the Facebook community

1	2	3	4	5
strongly disagree	disagree	neither agree nor disagree	agree	strongly agree

6. I would be sorry if Facebook shut down

1	2	3	4	5
strongly disagree	disagree	neither agree nor disagree	agree	strongly agree

7. Approximately how many TOTAL Facebook friends do you have?

   _____(state)

8. In the past week, on average, approximately how much time PER DAY have you spent actively using Facebook?

   _____minutes_____hours

10.1.1.5 Facebook Use Questionnaire

Instructions: Please complete this questionnaire reflecting your Facebook use today.

Date: _____

Approximate number of times logged in to Facebook today

_____

All of your responses will be anonymous, so please answer each of the following questions honestly. Please answer all questions. For the following questions, on a scale of 1 (strongly disagree) to 7 (strongly agree) please select the appropriate number that best describes your Facebook activity today.

1) I spent my time posting pictures of myself today

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

2) I spent my time looking at people's photos today

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

3) I spent my time reading and replying to messages from others today

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

4) I spent my time posting status updates today

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

5) I spent my time looking through the newsfeed today

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

6) I spent my time posting on my friends' walls today

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

7) I spent my time looking at/reading other people's profiles today
Strongly disagree 1 2 3 4 5 6 7 Strongly agree

8) I spent my time today looking up old contacts to friend.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

9) I spent my time commenting on / liking others' posts/pictures today

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

10) I spent my time replying to messages from others today

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

11) I spent my time editing my profile today

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

12) I spent my time today finding out what my friends were up to.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

13) I spent my time editing pictures today.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

14) I spent my time looking at what comments people had made about my photos today.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

15) I spent my time today looking for new contacts.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

16) Please circle the appropriate number on the scale of 1 to 7 to describe how you felt when you were logged on to Facebook today.

Sad	1 2 3 4 5 6 7	Happy
Relaxed	1 2 3 4 5 6 7	Stressed
Bored	1 2 3 4 5 6 7	Stimulated
Unworried	1 2 3 4 5 6 7	Anxious
Informed	1 2 3 4 5 6 7	Uninformed
Angry	1 2 3 4 5 6 7	Calm
Self-doubting	1 2 3 4 5 6 7	Confident
Positive	1 2 3 4 5 6 7	Negative
Unloved	1 2 3 4 5 6 7	Loved
Lonely	1 2 3 4 5 6 7	Sociable
Secure	1 2 3 4 5 6 7	Jealous
Ashamed	1 2 3 4 5 6 7	Proud

17) When you saw what other people were doing on Facebook today how did it make you feel? Please explain below.

_____
_____
_____
_____
_____

18) How do you feel when you see your Facebook friends posting about their accomplishments and achievements?

_____
_____
_____
_____

10.1.2 SPSS

10.1.2.1 SPSS output of the correlation matrix for initial PCA of semantic differential affect items.

Correlation Matrix[a]

		mean_sad_happy	mean_relaxed_stressed	mean_bored_stim
Correlation	mean_sad_happy	1.000	.650	.218
	mean_relaxed_stressed	.650	1.000	-.001
	mean_bored_stim	.218	-.001	1.000
	mean_unworried_anxious	.728	.845	.039
	mean_informed_uninformed	.557	.443	.100
	mean_angry_calm	.753	.710	.081
	mean_self_doubt_confident	.705	.689	.148
	mean_positive_negative	.826	.778	.164
	mean_unloved_loved	.711	.507	.218
	mean_lonely_sociable	.776	.542	.289
	mean_secure_jealous	.786	.676	.171
	mean_ashamed_proud	.757	.649	.144
Sig. (1-tailed)	mean_sad_happy		.000	.040
	mean_relaxed_stressed	.000		.497
	mean_bored_stim	.040	.497	
	mean_unworried_anxious	.000	.000	.380
	mean_informed_uninformed	.000	.000	.213
	mean_angry_calm	.000	.000	.260
	mean_self_doubt_confident	.000	.000	.119
	mean_positive_negative	.000	.000	.095
	mean_unloved_loved	.000	.000	.040
	mean_lonely_sociable	.000	.000	.010
	mean_secure_jealous	.000	.000	.086
	mean_ashamed_proud	.000	.000	.126

Correlation Matrix[a]

		mean_unworried_anxious	mean_informed_uninformed	mean_angry_calm
Correlation	mean_sad_happy	.728	.557	.753
	mean_relaxed_stressed	.845	.443	.710
	mean_bored_stim	.039	.100	.081
	mean_unworried_anxious	1.000	.507	.712
	mean_informed_uninformed	.507	1.000	.365
	mean_angry_calm	.712	.365	1.000
	mean_self_doubt_confident	.706	.469	.709
	mean_positive_negative	.823	.528	.854
	mean_unloved_loved	.533	.502	.747
	mean_lonely_sociable	.604	.511	.704
	mean_secure_jealous	.792	.586	.690
	mean_ashamed_proud	.631	.480	.717
Sig. (1-tailed)	mean_sad_happy	.000	.000	.000
	mean_relaxed_stressed	.000	.000	.000
	mean_bored_stim	.380	.213	.260
	mean_unworried_anxious		.000	.000
	mean_informed_uninformed	.000		.001
	mean_angry_calm	.000	.001	
	mean_self_doubt_confident	.000	.000	.000
	mean_positive_negative	.000	.000	.000
	mean_unloved_loved	.000	.000	.000
	mean_lonely_sociable	.000	.000	.000
	mean_secure_jealous	.000	.000	.000
	mean_ashamed_proud	.000	.000	.000

Correlation Matrix[a]

		mean_self_doubt_confident	mean_positive_negative	mean_unloved_loved
Correlation	mean_sad_happy	.705	.826	.711
	mean_relaxed_stressed	.689	.778	.507
	mean_bored_stim	.148	.164	.218
	mean_unworried_anxious	.706	.823	.533
	mean_informed_uninformed	.469	.528	.502
	mean_angry_calm	.709	.854	.747
	mean_self_doubt_confident	1.000	.822	.698
	mean_positive_negative	.822	1.000	.747
	mean_unloved_loved	.698	.747	1.000
	mean_lonely_sociable	.768	.785	.845
	mean_secure_jealous	.845	.809	.765
	mean_ashamed_proud	.782	.798	.806
Sig. (1-tailed)	mean_sad_happy	.000	.000	.000
	mean_relaxed_stressed	.000	.000	.000
	mean_bored_stim	.119	.095	.040
	mean_unworried_anxious	.000	.000	.000
	mean_informed_uninformed	.000	.000	.000
	mean_angry_calm	.000	.000	.000
	mean_self_doubt_confident		.000	.000
	mean_positive_negative	.000		.000
	mean_unloved_loved	.000	.000	
	mean_lonely_sociable	.000	.000	.000
	mean_secure_jealous	.000	.000	.000
	mean_ashamed_proud	.000	.000	.000

Correlation Matrix[a]

		mean_lonely_sociable	mean_secure_jealous	mean_ashamed_proud
Correlation	mean_sad_happy	.776	.786	.757
	mean_relaxed_stressed	.542	.676	.649
	mean_bored_stim	.289	.171	.144
	mean_unworried_anxious	.604	.792	.631
	mean_informed_uninformed	.511	.586	.480
	mean_angry_calm	.704	.690	.717
	mean_self_doubt_confident	.768	.845	.782
	mean_positive_negative	.785	.809	.798
	mean_unloved_loved	.845	.765	.806
	mean_lonely_sociable	1.000	.772	.812
	mean_secure_jealous	.772	1.000	.773
	mean_ashamed_proud	.812	.773	1.000
Sig. (1-tailed)	mean_sad_happy	.000	.000	.000
	mean_relaxed_stressed	.000	.000	.000
	mean_bored_stim	.010	.086	.126
	mean_unworried_anxious	.000	.000	.000
	mean_informed_uninformed	.000	.000	.000
	mean_angry_calm	.000	.000	.000
	mean_self_doubt_confident	.000	.000	.000
	mean_positive_negative	.000	.000	.000
	mean_unloved_loved	.000	.000	.000
	mean_lonely_sociable		.000	.000
	mean_secure_jealous	.000		.000
	mean_ashamed_proud	.000	.000	

a. Determinant = 1.73E-006

10.1.2.2 SPSS output of the KMO and Bartlett's test statistics for initial PCA of semantic differential affect items.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.901
Bartlett's Test of Sphericity	Approx. Chi-Square	784.890
	Df	66
	Sig.	.000

10.1.2.3 SPSS output of the anti image correlation sections of the anti image matrices for initial PCA of semantic differential affect items

The highlighted are the KMO for individual variables.

Anti-image Matrices

		mean_sad_happy	mean_relaxed_stressed	mean_bored_stim
Anti-image Correlation	mean_sad_happy	.937[a]	.043	-.125
	mean_relaxed_stressed	.043	.905[a]	.030
	mean_bored_stim	-.125	.030	.697[a]

Anti-image Matrices

		mean_unworried_anxious	mean_informed_uninformed	mean_angry_calm
Anti-image Correlation	mean_unworried_anxious	.857[a]	-.036	-.088
	mean_informed_uninformed	-.036	.920[a]	.303
	mean_angry_calm	-.088	.303	.892[a]

Anti-image Matrices

		mean_self_doubt_confident	mean_positive_negative	mean_unloved_loved

Anti-image Correlation	mean_self_doubt_confident	.896[a]	-.277	.228
	mean_positive_negative	-.277	.935[a]	-.049
	mean_unloved_loved	.228	-.049	.857[a]
	mean_lonely_sociable	-.256	-.075	-.421
	mean_secure_jealous	-.518	.117	-.405
	mean_ashamed_proud	-.169	-.131	-.291

Anti-image Matrices

		mean_lonely_sociable	mean_secure_jealous	mean_ashamed_proud
Anti-image Correlation	mean_lonely_sociable	.926[a]	.091	-.182
	mean_secure_jealous	.091	.872[a]	-.036
	mean_ashamed_proud	-.182	-.036	.944[a]

a. Measures of Sampling Adequacy(MSA)

10.1.2.4 SPSS output of the eigenvalues before extraction (Initial Eigenvalues) and the factors extracted (Extraction Sums of Squared Loadings), for initial PCA

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings	
	Total	% of Variance	Cumulative %	Total	% of Variance
1	8.024	66.868	66.868	8.024	66.868
2	1.134	9.448	76.316	1.134	9.448
3	.713	5.943	82.259		
4	.661	5.506	87.765		
5	.365	3.042	90.807		
6	.257	2.138	92.946		
7	.230	1.915	94.861		
8	.192	1.601	96.462		
9	.158	1.320	97.782		
10	.122	1.014	98.796		
11	.085	.704	99.500		
12	.060	.500	100.000		

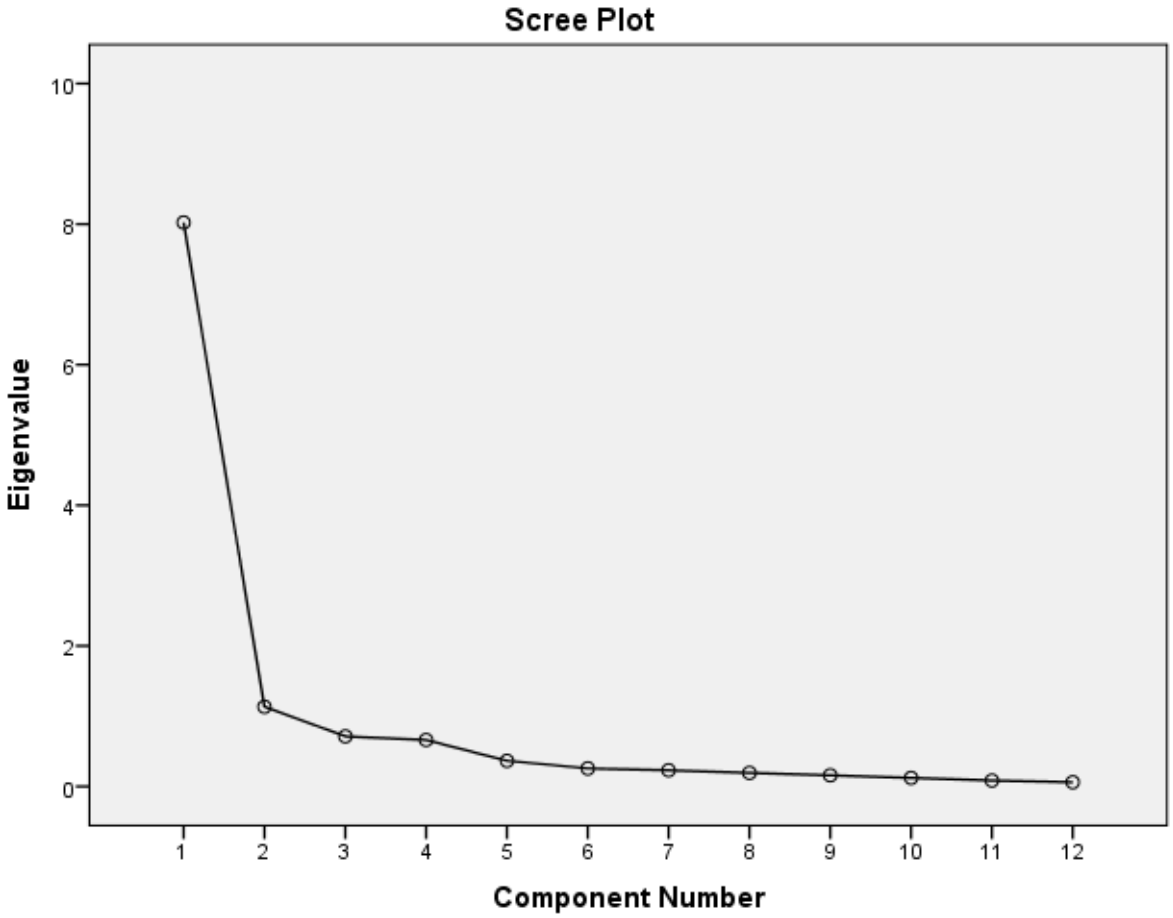
10.1.2.5 SPSS output of the total variance explained, Cumulative percentage of the Extraction Sums of Squared Loadings (featured in above table) and the Rotation Sums of Squared Loadings (the percentage of variance explained by each factor after rotation)

Total Variance Explained

Component	Extraction Sums of Squared Loadings	Rotation Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	66.868	7.826	65.217	65.217
2	76.316	1.332	11.099	76.316
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

Extraction Method: Principal Component Analysis.

10.1.2.6 The scree plot produced from initial PCA



a. 2 components extracted.

10.1.2.7 SPSS output of reproduced correlations for initial PCA of semantic differential affect items, also the residuals detail.

Highlighted sections displaying the communalities after extraction for each of the variables as well as the difference between the observed and anticipated correlation coefficients within the 'residuals' section of the table.

Also, within the residual section of this table the difference between the observed and predicted correlation coefficients are given. The number of residuals greater than 0.05 do not exceed the 50% region and thus do not cause concern (Field, 2013).

Reproduced Correlations

		mean_sad_happy	mean_relaxed_stressed
Reproduced Correlation	mean_sad_happy	.788[a]	.682
	mean_relaxed_stressed	.682	.768[a]
	mean_bored_stim	.227	-.165
	mean_unworried_anxious	.725	.780
	mean_informed_uninformed	.549	.483
	mean_angry_calm	.750	.723
	mean_self_doubt_confident	.779	.708
	mean_positive_negative	.830	.774
	mean_unloved_loved	.763	.591
	mean_lonely_sociable	.792	.602
	mean_secure_jealous	.807	.722
	mean_ashamed_proud	.784	.679
Residual[b]	mean_sad_happy		-.032
	mean_relaxed_stressed	-.032	
	mean_bored_stim	-.009	.164
	mean_unworried_anxious	.003	.065
	mean_informed_uninformed	.008	-.041
	mean_angry_calm	.002	-.013
	mean_self_doubt_confident	-.074	-.019
	mean_positive_negative	-.004	.004
	mean_unloved_loved	-.052	-.084
	mean_lonely_sociable	-.015	-.060
	mean_secure_jealous	-.021	-.046
	mean_ashamed_proud	-.027	-.031

Reproduced Correlations

		mean_bored_stim	mean_unworried_anxious
Reproduced Correlation	mean_sad_happy	.227	.725
	mean_relaxed_stressed	-.165	.780
	mean_bored_stim	.801[a]	-.103
	mean_unworried_anxious	-.103	.798[a]
	mean_informed_uninformed	.141	.512
	mean_angry_calm	.067	.753
	mean_self_doubt_confident	.155	.745
	mean_positive_negative	.126	.811
	mean_unloved_loved	.361	.641
	mean_lonely_sociable	.397	.656
	mean_secure_jealous	.183	.762
	mean_ashamed_proud	.225	.722
Residual[b]	mean_sad_happy	-.009	.003
	mean_relaxed_stressed	.164	.065
	mean_bored_stim		.142
	mean_unworried_anxious	.142	
	mean_informed_uninformed	-.041	-.005
	mean_angry_calm	.014	-.041
	mean_self_doubt_confident	-.006	-.039
	mean_positive_negative	.039	.012
	mean_unloved_loved	-.143	-.108
	mean_lonely_sociable	-.108	-.052
	mean_secure_jealous	-.012	.029
	mean_ashamed_proud	-.081	-.090

Reproduced Correlations

		mean_informed_uninformed	mean_angry_calm
Reproduced Correlation	mean_sad_happy	.549	.750
	mean_relaxed_stressed	.483	.723
	mean_bored_stim	.141	.067
	mean_unworried_anxious	.512	.753
	mean_informed_uninformed	.383[a]	.526
	mean_angry_calm	.526	.745[a]
	mean_self_doubt_confident	.544	.755
	mean_positive_negative	.580	.813
	mean_unloved_loved	.528	.697
	mean_lonely_sociable	.547	.719
	mean_secure_jealous	.563	.778
	mean_ashamed_proud	.546	.747
Residual[b]	mean_sad_happy	.008	.002
	mean_relaxed_stressed	-.041	-.013
	mean_bored_stim	-.041	.014
	mean_unworried_anxious	-.005	-.041
	mean_informed_uninformed		-.161
	mean_angry_calm	-.161	
	mean_self_doubt_confident	-.074	-.046
	mean_positive_negative	-.052	.042
	mean_unloved_loved	-.026	.050
	mean_lonely_sociable	-.036	-.015
	mean_secure_jealous	.024	-.088
	mean_ashamed_proud	-.066	-.030

Reproduced Correlations

		mean_self_doubt_confident	mean_positive_negative
Reproduced Correlation	mean_sad_happy	.779	.830
	mean_relaxed_stressed	.708	.774
	mean_bored_stim	.155	.126
	mean_unworried_anxious	.745	.811
	mean_informed_uninformed	.544	.580
	mean_angry_calm	.755	.813
	mean_self_doubt_confident	.776[a]	.830
	mean_positive_negative	.830	.891[a]
	mean_unloved_loved	.740	.781
	mean_lonely_sociable	.766	.807
	mean_secure_jealous	.802	.857
	mean_ashamed_proud	.775	.826
Residual[b]	mean_sad_happy	-.074	-.004
	mean_relaxed_stressed	-.019	.004
	mean_bored_stim	-.006	.039
	mean_unworried_anxious	-.039	.012
	mean_informed_uninformed	-.074	-.052
	mean_angry_calm	-.046	.042
	mean_self_doubt_confident		-.008
	mean_positive_negative	-.008	
	mean_unloved_loved	-.042	-.034
	mean_lonely_sociable	.002	-.023
	mean_secure_jealous	.043	-.047
	mean_ashamed_proud	.006	-.028

Reproduced Correlations

		mean_unloved_loved	mean_lonely_sociable
Reproduced Correlation	mean_sad_happy	.763	.792
	mean_relaxed_stressed	.591	.602
	mean_bored_stim	.361	.397
	mean_unworried_anxious	.641	.656
	mean_informed_uninformed	.528	.547
	mean_angry_calm	.697	.719
	mean_self_doubt_confident	.740	.766
	mean_positive_negative	.781	.807
	mean_unloved_loved	.765[a]	.799
	mean_lonely_sociable	.799	.834[a]
	mean_secure_jealous	.771	.799
	mean_ashamed_proud	.759	.788
Residual[b]	mean_sad_happy	-.052	-.015
	mean_relaxed_stressed	-.084	-.060
	mean_bored_stim	-.143	-.108
	mean_unworried_anxious	-.108	-.052
	mean_informed_uninformed	-.026	-.036
	mean_angry_calm	.050	-.015
	mean_self_doubt_confident	-.042	.002
	mean_positive_negative	-.034	-.023
	mean_unloved_loved		.047
	mean_lonely_sociable	.047	
	mean_secure_jealous	-.006	-.027
	mean_ashamed_proud	.047	.024

Reproduced Correlations

		mean_secure_jealous	mean_ashamed_proud
Reproduced Correlation	mean_sad_happy	.807	.784
	mean_relaxed_stressed	.722	.679
	mean_bored_stim	.183	.225
	mean_unworried_anxious	.762	.722
	mean_informed_uninformed	.563	.546
	mean_angry_calm	.778	.747
	mean_self_doubt_confident	.802	.775
	mean_positive_negative	.857	.826
	mean_unloved_loved	.771	.759
	mean_lonely_sociable	.799	.788
	mean_secure_jealous	.829[a]	.803
	mean_ashamed_proud	.803	.781[a]
Residual[b]	mean_sad_happy	-.021	-.027
	mean_relaxed_stressed	-.046	-.031
	mean_bored_stim	-.012	-.081
	mean_unworried_anxious	.029	-.090
	mean_informed_uninformed	.024	-.066
	mean_angry_calm	-.088	-.030
	mean_self_doubt_confident	.043	.006
	mean_positive_negative	-.047	-.028
	mean_unloved_loved	-.006	.047
	mean_lonely_sociable	-.027	.024
	mean_secure_jealous		-.030
	mean_ashamed_proud	-.030	

Extraction Method: Principal Component Analysis.

a. Reproduced communalities

b. Residuals are computed between observed and reproduced correlations. There are 18 (27.0%) nonredundant residuals with absolute values greater than 0.05.

10.1.2.8 SPSS output of the Component Transformation Matrix for initial PCA of semantic differential affect items.

The Component Transformation Matrix displays the component correlation matrix prior to and after rotation.

Component Transformation Matrix

Component	1	2
1	.986	.170
2	-.170	.986

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

10.1.2.9 SPSS output of the correlation matrix for the second PCA

Correlation Matrix[a]

		mean_sad_happy	mean_relaxed_stressed	mean_unworried_anxious
Correlation	mean_sad_happy	1.000	.650	.728
	mean_relaxed_stressed	.650	1.000	.845
	mean_unworried_anxious	.728	.845	1.000
	mean_angry_calm	.753	.710	.712
	mean_self_doubt_confident	.705	.689	.706
	mean_positive_negative	.826	.778	.823
	mean_secure_jealous	.786	.676	.792
	mean_ashamed_proud	.757	.649	.631
Sig. (1-tailed)	mean_sad_happy		.000	.000
	mean_relaxed_stressed	.000		.000
	mean_unworried_anxious	.000	.000	
	mean_angry_calm	.000	.000	.000
	mean_self_doubt_confident	.000	.000	.000
	mean_positive_negative	.000	.000	.000
	mean_secure_jealous	.000	.000	.000
	mean_ashamed_proud	.000	.000	.000

Correlation Matrix[a]

		mean_angry_calm	mean_self_doubt_confident	mean_positive_negative
Correlation	mean_sad_happy	.753	.705	.826
	mean_relaxed_stressed	.710	.689	.778
	mean_unworried_anxious	.712	.706	.823
	mean_angry_calm	1.000	.709	.854
	mean_self_doubt_confident	.709	1.000	.822
	mean_positive_negative	.854	.822	1.000
	mean_secure_jealous	.690	.845	.809
	mean_ashamed_proud	.717	.782	.798
Sig. (1-tailed)	mean_sad_happy	.000	.000	.000
	mean_relaxed_stressed	.000	.000	.000
	mean_unworried_anxious	.000	.000	.000
	mean_angry_calm		.000	.000
	mean_self_doubt_confident	.000		.000
	mean_positive_negative	.000	.000	
	mean_secure_jealous	.000	.000	.000
	mean_ashamed_proud	.000	.000	.000

Correlation Matrix[a]

		mean_secure_jealous	mean_ashamed_proud
Correlation	mean_sad_happy	.786	.757
	mean_relaxed_stressed	.676	.649
	mean_unworried_anxious	.792	.631
	mean_angry_calm	.690	.717
	mean_self_doubt_confident	.845	.782
	mean_positive_negative	.809	.798
	mean_secure_jealous	1.000	.773
	mean_ashamed_proud	.773	1.000
Sig. (1-tailed)	mean_sad_happy	.000	.000
	mean_relaxed_stressed	.000	.000
	mean_unworried_anxious	.000	.000
	mean_angry_calm	.000	.000
	mean_self_doubt_confident	.000	.000
	mean_positive_negative	.000	.000
	mean_secure_jealous		.000
	mean_ashamed_proud	.000	

a. Determinant = 9.78E-005

10.1.2.10 SPSS output with statistics for KMO and Bartlett's test for second PCA

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.897
Bartlett's Test of Sphericity	Approx. Chi-Square	558.564
	df	28
	Sig.	.000

10.1.2.11 SPSS output of anti image matrices for second PCA

Anti-image Matrices

		mean_sad_happy	mean_relaxed_stressed	mean_unworried_anxious
Anti-image Covariance	mean_sad_happy	.250	.019	-.016
	mean_relaxed_stressed	.019	.237	-.119
	mean_unworried_anxious	-.016	-.119	.161
	mean_angry_calm	-.041	-.033	.007
	mean_self_doubt_confident	.039	-.033	.029
	mean_positive_negative	-.044	-.007	-.041
	mean_secure_jealous	-.056	.043	-.072
	mean_ashamed_proud	-.056	-.044	.059
Anti-image Correlation	mean_sad_happy	.937[a]	.079	-.080
	mean_relaxed_stressed	.079	.878[a]	-.611
	mean_unworried_anxious	-.080	-.611	.837[a]
	mean_angry_calm	-.165	-.133	.035
	mean_self_doubt_confident	.174	-.152	.158
	mean_positive_negative	-.259	-.040	-.297
	mean_secure_jealous	-.275	.214	-.437
	mean_ashamed_proud	-.220	-.179	.288

Anti-image Matrices

		mean_angry_calm	mean_self_doubt_confident	mean_positive_negative
Anti-image Covariance	mean_sad_happy	-.041	.039	-.044
	mean_relaxed_stressed	-.033	-.033	-.007
	mean_unworried_anxious	.007	.029	-.041
	mean_angry_calm	.254	-.004	-.076
	mean_self_doubt_confident	-.004	.205	-.045
	mean_positive_negative	-.076	-.045	.116
	mean_secure_jealous	.017	-.093	.008
	mean_ashamed_proud	-.017	-.044	-.035
Anti-image Correlation	mean_sad_happy	-.165	.174	-.259
	mean_relaxed_stressed	-.133	-.152	-.040
	mean_unworried_anxious	.035	.158	-.297
	mean_angry_calm	.937[a]	-.018	-.445
	mean_self_doubt_confident	-.018	.898[a]	-.293
	mean_positive_negative	-.445	-.293	.906[a]
	mean_secure_jealous	.081	-.502	.055
	mean_ashamed_proud	-.067	-.189	-.201

Anti-image Matrices

		mean_secure_jealous	mean_ashamed_proud
Anti-image Covariance	mean_sad_happy	-.056	-.056
	mean_relaxed_stressed	.043	-.044
	mean_unworried_anxious	-.072	.059
	mean_angry_calm	.017	-.017
	mean_self_doubt_confident	-.093	-.044
	mean_positive_negative	.008	-.035
	mean_secure_jealous	.167	-.048
	mean_ashamed_proud	-.048	.261
Anti-image Correlation	mean_sad_happy	-.275	-.220
	mean_relaxed_stressed	.214	-.179
	mean_unworried_anxious	-.437	.288
	mean_angry_calm	.081	-.067
	mean_self_doubt_confident	-.502	-.189
	mean_positive_negative	.055	-.201
	mean_secure_jealous	.869[a]	-.231
	mean_ashamed_proud	-.231	.927[a]

a. Measures of Sampling Adequacy(MSA)

10.1.2.12 SPSS output of initial eigenvalues and extraction sums of squared loadings for second PCA

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings	
Component	Total	% of Variance	Cumulative %	Total	% of Variance
1	6.260	78.253	78.253	6.260	78.253
2	.515	6.433	84.686		
3	.371	4.635	89.321		
4	.293	3.665	92.986		
5	.231	2.888	95.874		
6	.141	1.760	97.634		
7	.114	1.425	99.058		
8	.075	.942	100.000		

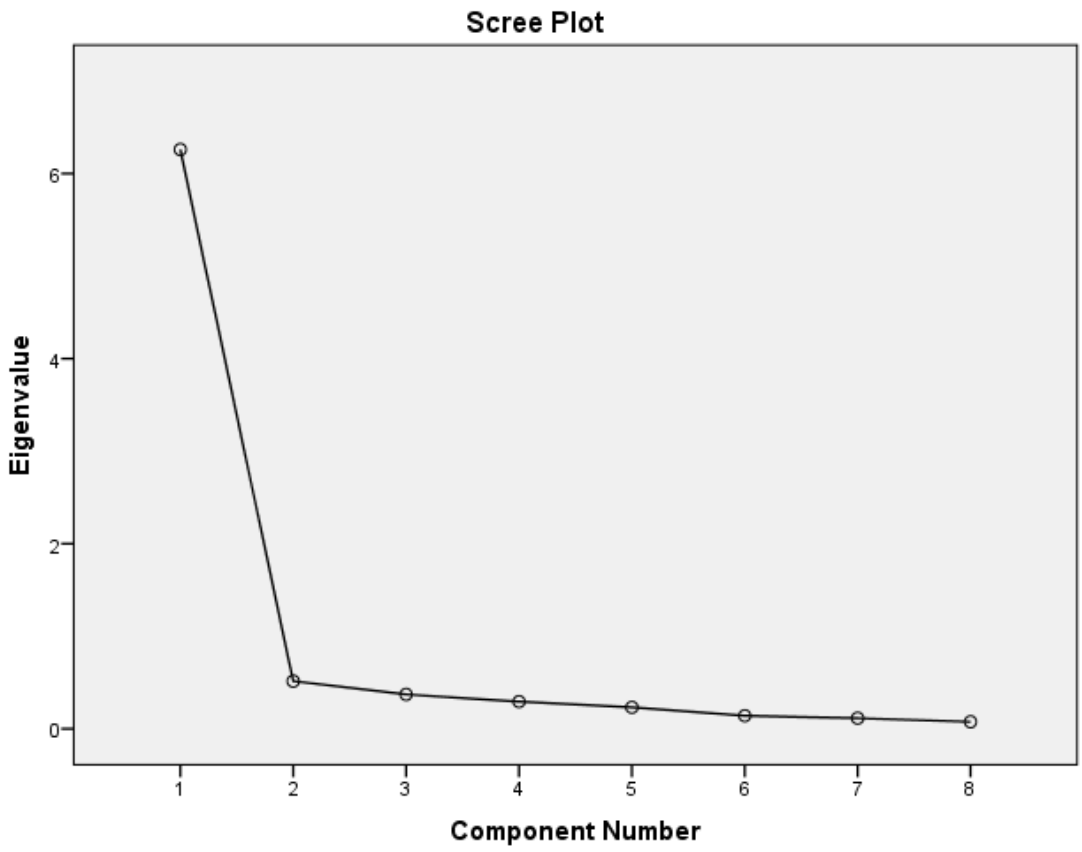
10.1.2.13 SPSS output of extraction sums of squared loadings as a cumulative percentage for second PCA

Total Variance Explained

Component	Extraction Sums of Squared Loadings Cumulative %
1	78.253
2	
3	
4	
5	
6	
7	
8	

Extraction Method: Principal Component Analysis.

10.1.2.14 Scree plot for the second PCA



10.1.2.15 SPSS output of reproduced correlations and residuals details for second PCA

Reproduced Correlations

		mean_sad_happy	mean_relaxed_stressed
Reproduced Correlation	mean_sad_happy	.770[a]	.742
	mean_relaxed_stressed	.742	.716[a]
	mean_unworried_anxious	.774	.746
	mean_angry_calm	.762	.735
	mean_self_doubt_confident	.777	.749
	mean_positive_negative	.834	.804
	mean_secure_jealous	.791	.763
	mean_ashamed_proud	.757	.730
Residual[b]	mean_sad_happy		-.092
	mean_relaxed_stressed	-.092	
	mean_unworried_anxious	-.046	.099
	mean_angry_calm	-.009	-.025
	mean_self_doubt_confident	-.072	-.060
	mean_positive_negative	-.008	-.026
	mean_secure_jealous	-.005	-.087
	mean_ashamed_proud	7.978E-5	-.081

Reproduced Correlations

		mean_unworried_anxious	mean_angry_calm
Reproduced Correlation	mean_sad_happy	.774	.762
	mean_relaxed_stressed	.746	.735
	mean_unworried_anxious	.777[a]	.766
	mean_angry_calm	.766	.754[a]
	mean_self_doubt_confident	.780	.769
	mean_positive_negative	.837	.825
	mean_secure_jealous	.795	.783
	mean_ashamed_proud	.761	.749
Residual[b]	mean_sad_happy	-.046	-.009
	mean_relaxed_stressed	.099	-.025
	mean_unworried_anxious		-.054
	mean_angry_calm	-.054	
	mean_self_doubt_confident	-.074	-.059
	mean_positive_negative	-.014	.029

	mean_secure_jealous	-.003	-.093
	mean_ashamed_proud	-.130	-.032

Reproduced Correlations

		mean_self_doubt_confident	mean_positive_negative
Reproduced Correlation	mean_sad_happy	.777	.834
	mean_relaxed_stressed	.749	.804
	mean_unworried_anxious	.780	.837
	mean_angry_calm	.769	.825
	mean_self_doubt_confident	.784[a]	.841
	mean_positive_negative	.841	.902[a]
	mean_secure_jealous	.798	.856
	mean_ashamed_proud	.764	.820
Residual[b]	mean_sad_happy	-.072	-.008
	mean_relaxed_stressed	-.060	-.026
	mean_unworried_anxious	-.074	-.014
	mean_angry_calm	-.059	.029
	mean_self_doubt_confident		-.019
	mean_positive_negative	-.019	
	mean_secure_jealous	.047	-.047
	mean_ashamed_proud	.018	-.022

Reproduced Correlations

		mean_secure_jealous	mean_ashamed_proud
Reproduced Correlation	mean_sad_happy	.791	.757
	mean_relaxed_stressed	.763	.730
	mean_unworried_anxious	.795	.761
	mean_angry_calm	.783	.749
	mean_self_doubt_confident	.798	.764
	mean_positive_negative	.856	.820
	mean_secure_jealous	.813[a]	.778
	mean_ashamed_proud	.778	.745[a]
Residual[b]	mean_sad_happy	-.005	7.978E-5
	mean_relaxed_stressed	-.087	-.081
	mean_unworried_anxious	-.003	-.130
	mean_angry_calm	-.093	-.032
	mean_self_doubt_confident	.047	.018
	mean_positive_negative	-.047	-.022
	mean_secure_jealous		-.005

mean_ashamed_proud	-.005	

Extraction Method: Principal Component Analysis.

a. Reproduced communalities

b. Residuals are computed between observed and reproduced correlations. There are 11 (39.0%) nonredundant residuals with absolute values greater than 0.05.

10.1.3 Selected SPSS output for regressions from study 1

10.1.3.1 Looking at people's photos

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	incom_score, fbav, sccscore, sescore[b]	.	Enter

a. Dependent Variable: mean_look_at_ppl_photos

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.549[a]	.302	.255	1.12220	2.243

a. Predictors: (Constant), incom_score, fbav, sccscore, sescore

b. Dependent Variable: mean_look_at_ppl_photos

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32.664	4	8.166	6.484	.000[b]
	Residual	75.559	60	1.259		
	Total	108.223	64			

a. Dependent Variable: mean_look_at_ppl_photos

b. Predictors: (Constant), incom_score, fbav, sccscore, sescore

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.698	1.214		.575	.567
	sccscore	-.039	.020	-.301	-1.969	.054
	sescore	.047	.030	.235	1.533	.131
	fbav	.758	.183	.469	4.151	.000
	incom_score	.020	.024	.100	.844	.402

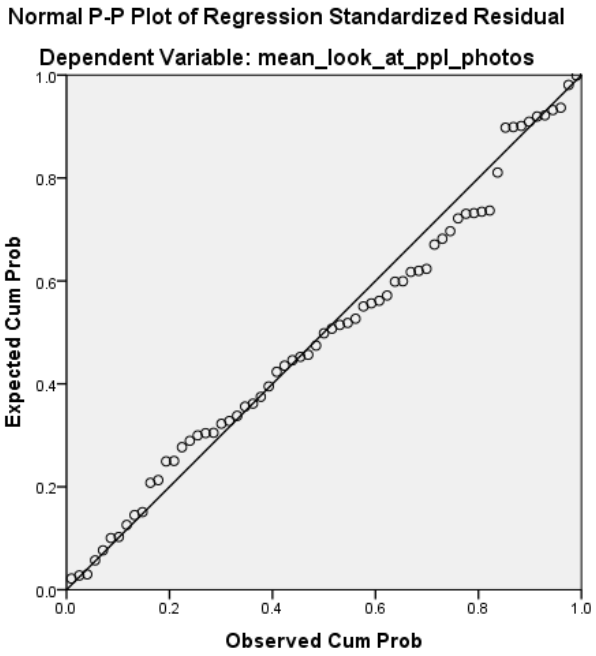
Coefficients[a]

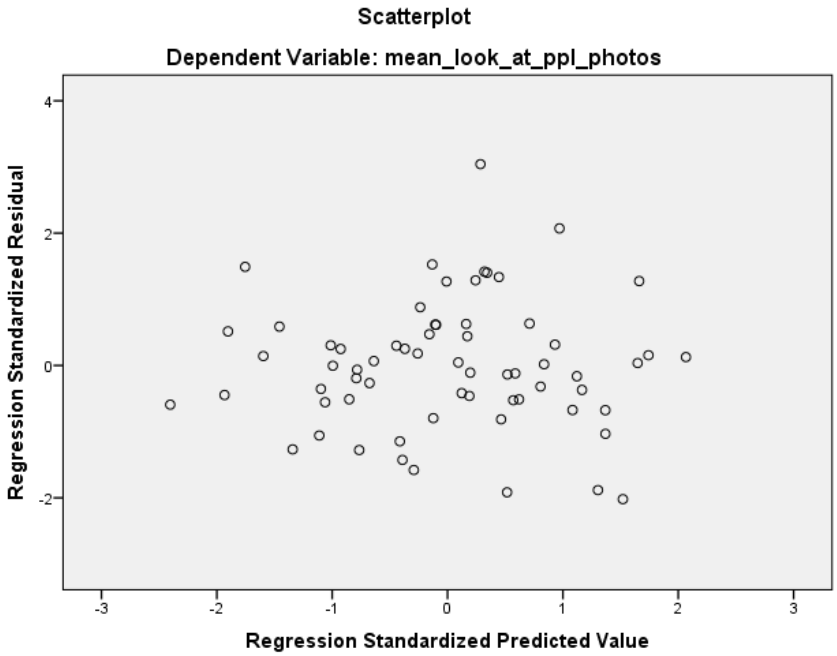
Model		95.0% Confidence Interval for B		Correlations		
		Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	-1.731	3.128			
	sccscore	-.079	.001	-.120	-.246	-.212
	sescore	-.014	.108	.059	.194	.165
	fbav	.393	1.124	.490	.472	.448
	incom_score	-.028	.068	.220	.108	.091

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	sccscore	.498	2.008
	sescore	.497	2.013
	fbav	.912	1.097
	incom_score	.821	1.218

a. Dependent Variable: mean_look_at_ppl_photos





10.1.3.2 Looking at the newsfeed

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	incom_score, fbav, sccscore, sescore[b]	.	Enter

a. Dependent Variable: mean_look_at_newsfeed

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.449[a]	.202	.148	1.45738	1.577

a. Predictors: (Constant), incom_score, fbav, sccscore, sescore

b. Dependent Variable: mean_look_at_newsfeed

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32.183	4	8.046	3.788	.008[b]
	Residual	127.437	60	2.124		
	Total	159.620	64			

a. Dependent Variable: mean_look_at_newsfeed

b. Predictors: (Constant), incom_score, fbav, sccscore, sescore

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.962	1.577		.610	.544
	sccscore	-.014	.026	-.088	-.538	.593
	sescore	.061	.040	.254	1.552	.126
	fbav	.683	.237	.348	2.881	.005
	incom_score	.031	.031	.126	.993	.324

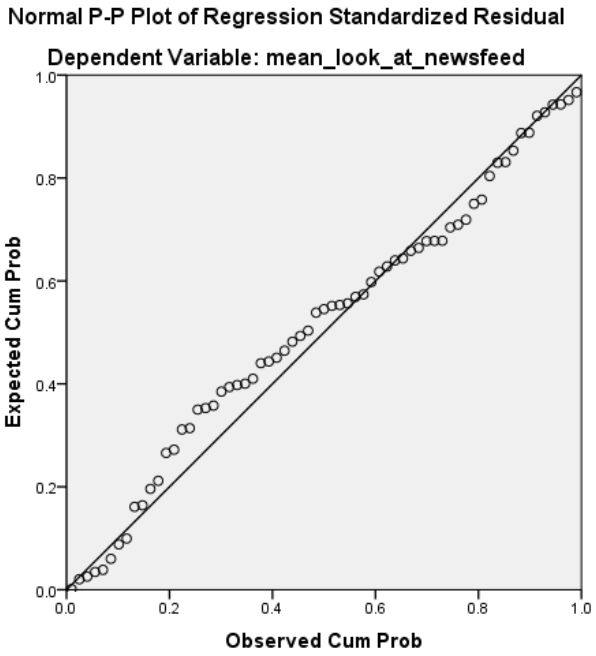
Coefficients[a]

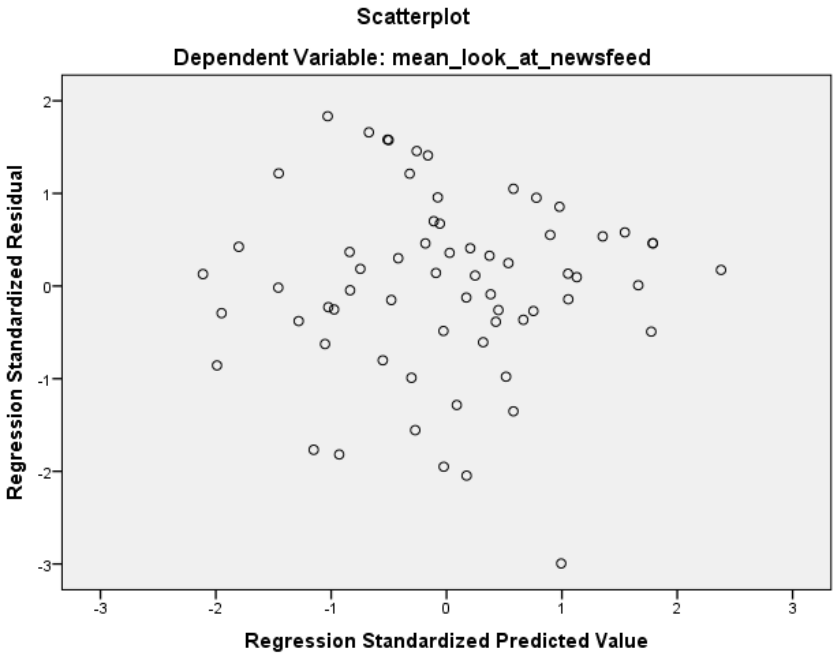
Model		95.0% Confidence Interval for B		Correlations		
		Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	-2.193	4.116			
	sccscore	-.066	.038	.086	-.069	-.062
	sescore	-.018	.140	.202	.196	.179
	fbav	.209	1.158	.400	.349	.332
	incom_score	-.031	.093	.147	.127	.115

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	sccscore	.498	2.008
	sescore	.497	2.013
	fbav	.912	1.097
	incom_score	.821	1.218

a. Dependent Variable: mean_look_at_newsfeed





10.1.3.3 Reading others profiles

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	incom_score, fbav, sccscore, sescore[b]	.	Enter

a. Dependent Variable: mean_reading_others_profiles

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.414[a]	.171	.116	1.38232	2.567

a. Predictors: (Constant), incom_score, fbav, sccscore, sescore

b. Dependent Variable: mean_reading_others_profiles

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.709	4	5.927	3.102	.022[b]
	Residual	114.649	60	1.911		
	Total	138.357	64			

a. Dependent Variable: mean_reading_others_profiles

b. Predictors: (Constant), incom_score, fbav, sccscore, sescore

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.218	1.496		.814	.419
	sccscore	-.048	.025	-.322	-1.934	.058
	sescore	.042	.038	.187	1.122	.266
	fbav	.570	.225	.312	2.532	.014
	incom_score	.019	.029	.082	.633	.529

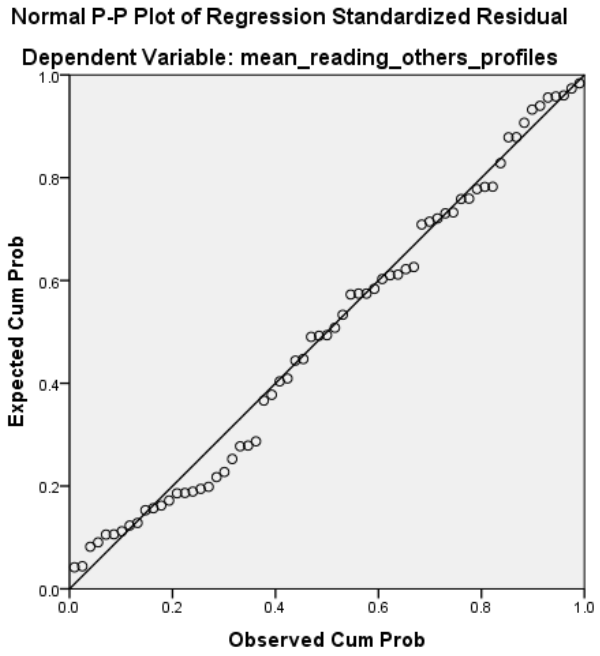
Coefficients[a]

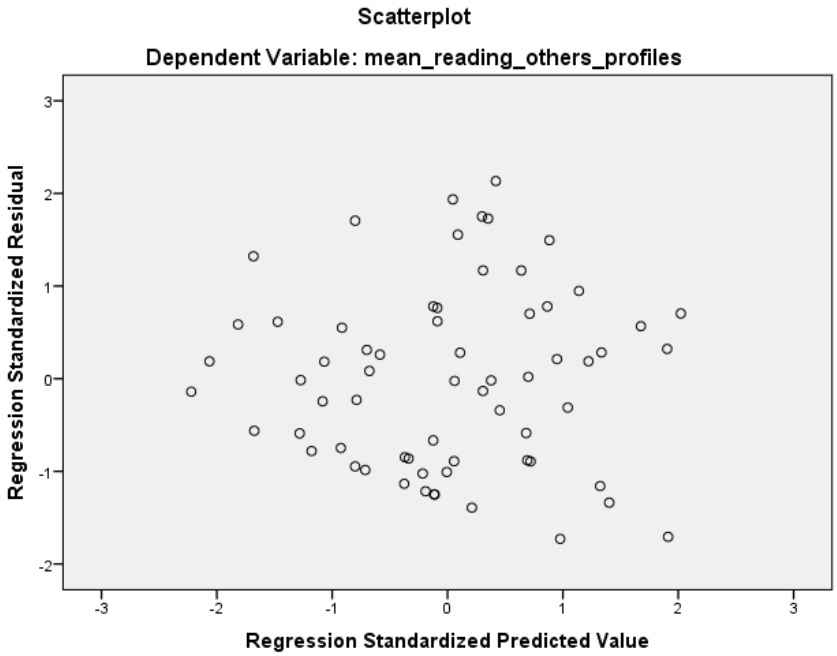
Model		95.0% Confidence Interval for B		Correlations		
		Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	-1.774	4.210			
	sccscore	-.097	.002	-.185	-.242	-.227
	sescore	-.033	.117	-.020	.143	.132
	fbav	.120	1.020	.320	.311	.298
	incom_score	-.040	.077	.191	.081	.074

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	sccscore	.498	2.008
	sescore	.497	2.013
	fbav	.912	1.097
	incom_score	.821	1.218

a. Dependent Variable: mean_reading_others_profiles





10.1.3.4 Finding out what friends are up to

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	incom_score, fbav, sccscore, sescore[b]	.	Enter

a. Dependent Variable: mean_finding_out_friends_up_to

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.404[a]	.163	.108	1.43993	2.083

a. Predictors: (Constant), incom_score, fbav, sccscore, sescore

b. Dependent Variable: mean_finding_out_friends_up_to

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.311	4	6.078	2.931	.028[b]
	Residual	124.404	60	2.073		
	Total	148.715	64			

a. Dependent Variable: mean_finding_out_friends_up_to

b. Predictors: (Constant), incom_score, fbav, sccscore, sescore

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.863	1.558		1.195	.237
	sccscore	-.028	.026	-.181	-1.084	.283
	sescore	-.001	.039	-.002	-.014	.989
	fbav	.669	.234	.353	2.853	.006
	incom_score	.014	.031	.060	.461	.646

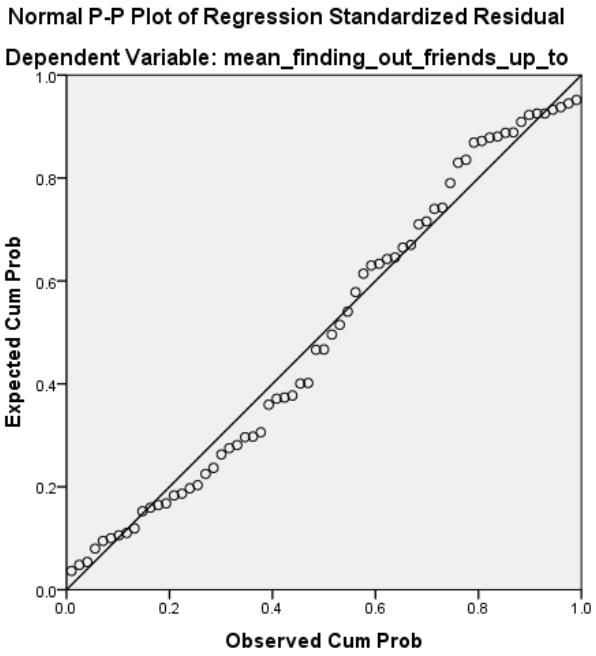
Coefficients[a]

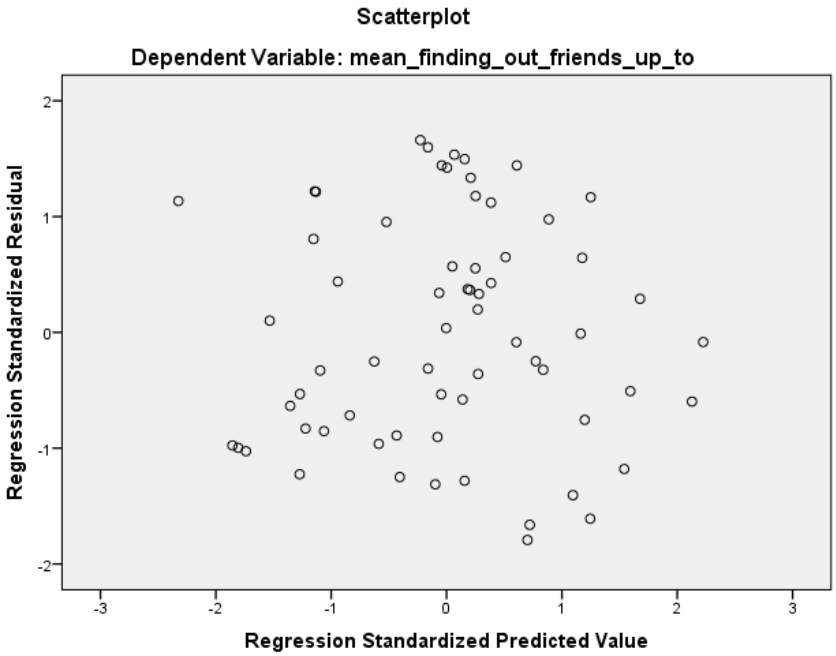
Model		95.0% Confidence Interval for B		Correlations		
		Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	-1.254	4.980			
	sccscore	-.079	.023	-.165	-.139	-.128
	sescore	-.079	.078	-.098	-.002	-.002
	fbav	.200	1.138	.345	.346	.337
	incom_score	-.047	.075	.190	.059	.054

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	sccscore	.498	2.008
	sescore	.497	2.013
	fbav	.912	1.097
	incom_score	.821	1.218

a. Dependent Variable: mean_finding_out_friends_up_to





10.1.3.5 Factor 1

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	fbav, sccscore, incom_score, sescore[b]	.	Enter

a. Dependent Variable: factor_one

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.637[a]	.406	.366	.89590	1.788

a. Predictors: (Constant), fbav, sccscore, incom_score, sescore

b. Dependent Variable: factor_one

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32.908	4	8.227	10.250	.000[b]
	Residual	48.159	60	.803		
	Total	81.067	64			

a. Dependent Variable: factor_one

b. Predictors: (Constant), fbav, sccscore, incom_score, sescore

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.030	.969		2.094	.041
	incom_score	.012	.019	.067	.609	.545
	sescore	.076	.024	.439	3.108	.003
	sccscore	.031	.016	.272	1.926	.059
	fbav	-.011	.146	-.008	-.077	.939

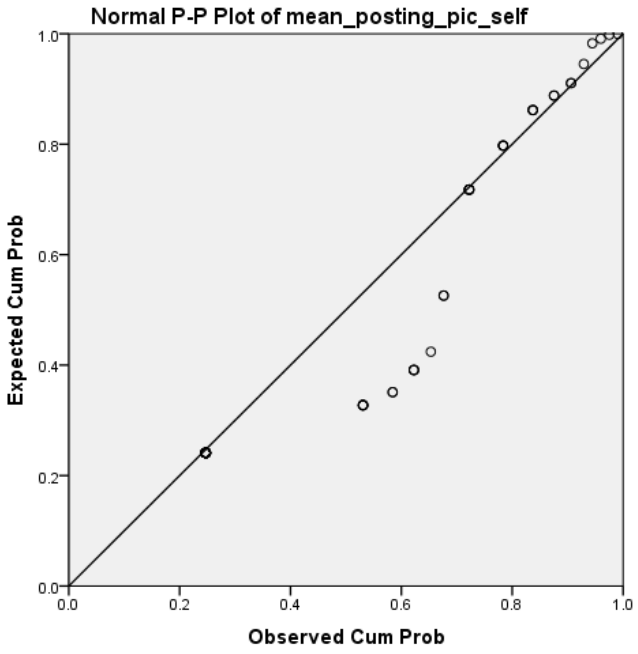
Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	incom_score	.821	1.218
	sescore	.497	2.013
	sccscore	.498	2.008
	fbav	.912	1.097

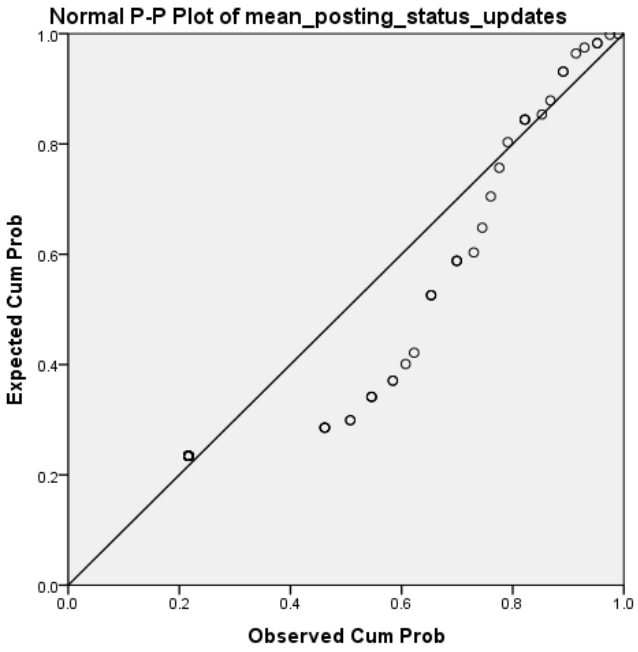
a. Dependent Variable: factor_one

10.1.4 Pp plots of the Facebook activities excluded from regression analyses due to their non normal distribution.

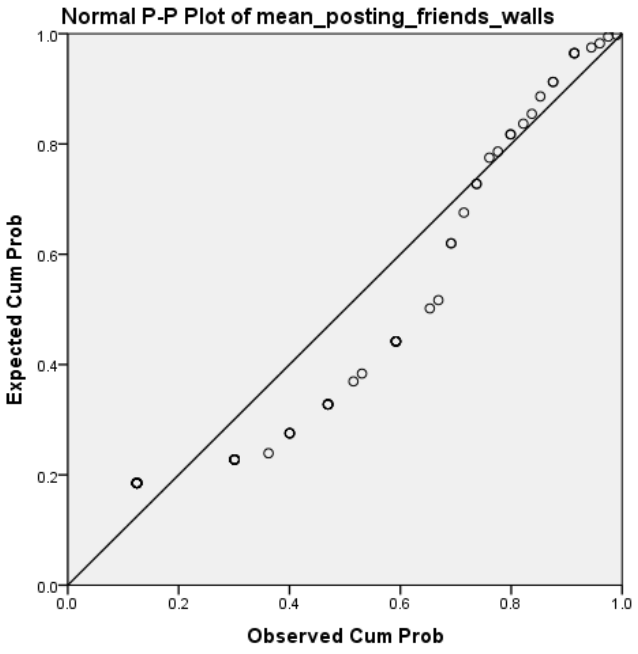
10.1.4.1 Pp plot of the mean posting pictures of self variable before outliers removed.



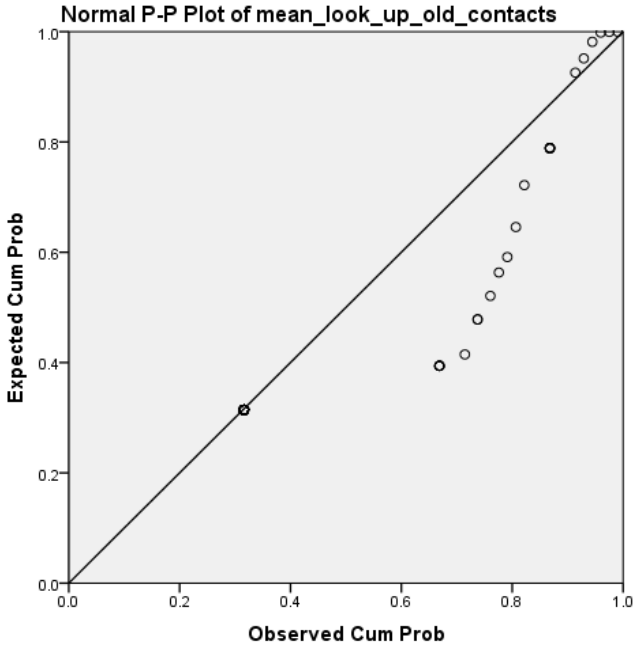
10.1.4.2 Pp plot of the mean posting status updates variable before outliers removed



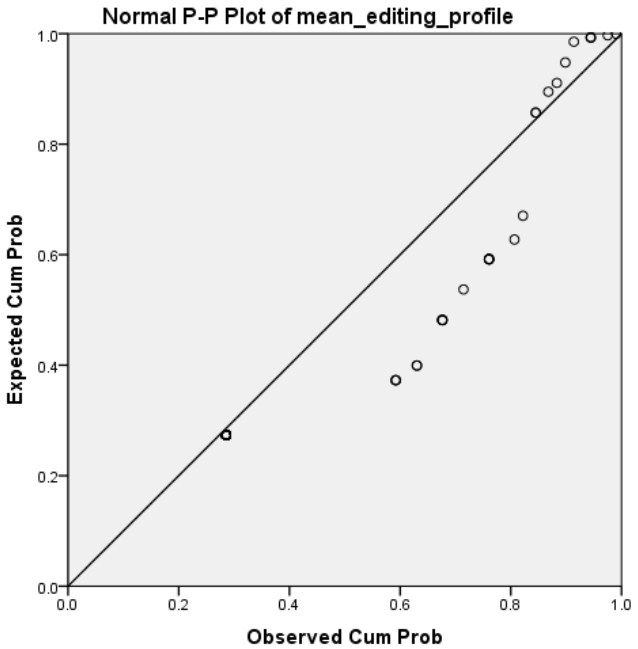
10.1.4.3 Pp plot of the mean posting on friends' walls variable before outliers removed



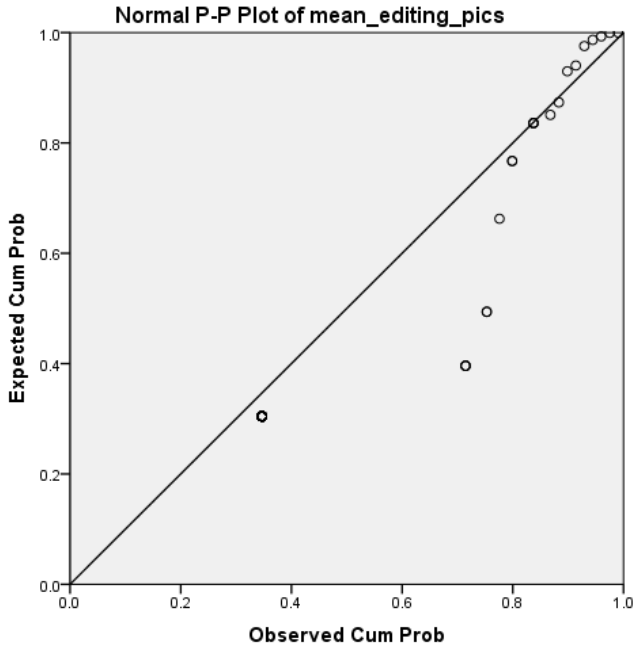
10.1.4.4 Pp plot of the mean looking up old contacts variable before outliers removed



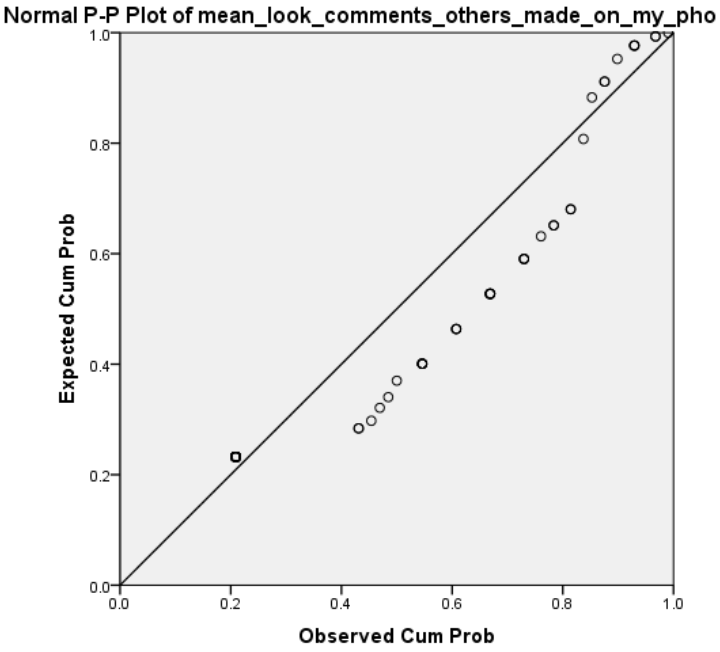
10.1.4.5 Pp plot of the mean editing the Facebook profile variable before outliers removed



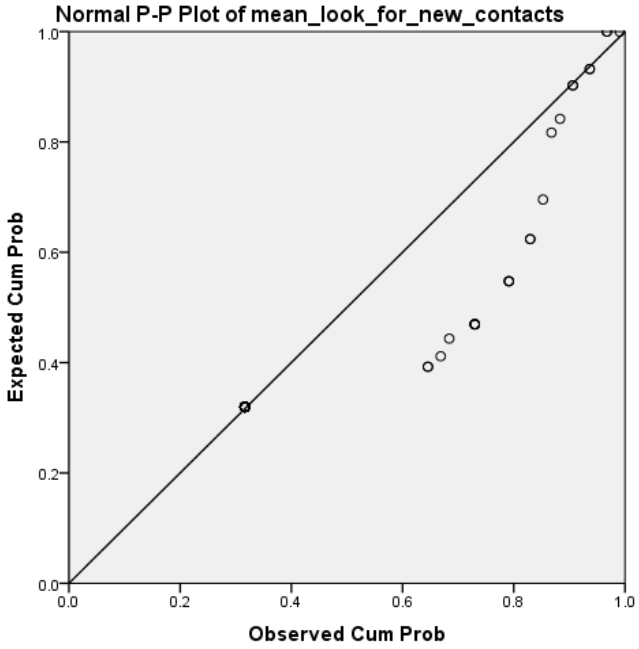
10.1.4.6 Pp plot of the mean editing pictures variable before outliers removed



10.1.4.7 Pp plot of the mean looking at comments others made on my photos variable before outliers removed

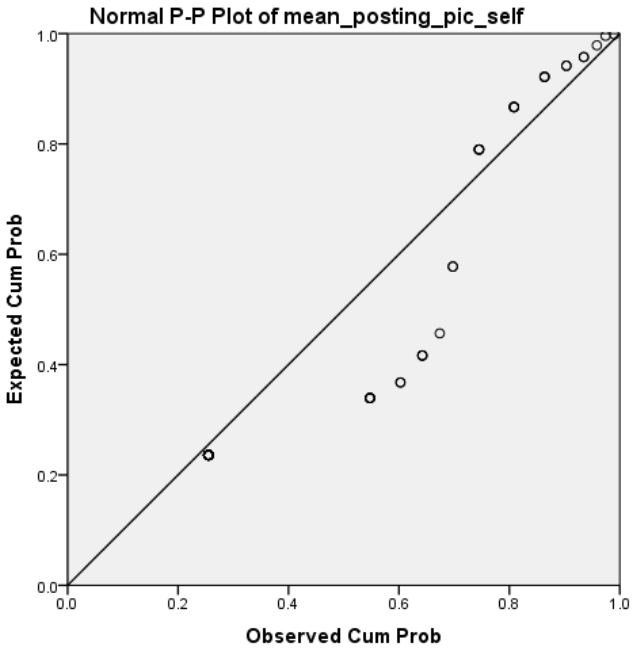


10.1.4.8 Pp plot of the mean looking for new contacts variable before outliers removed

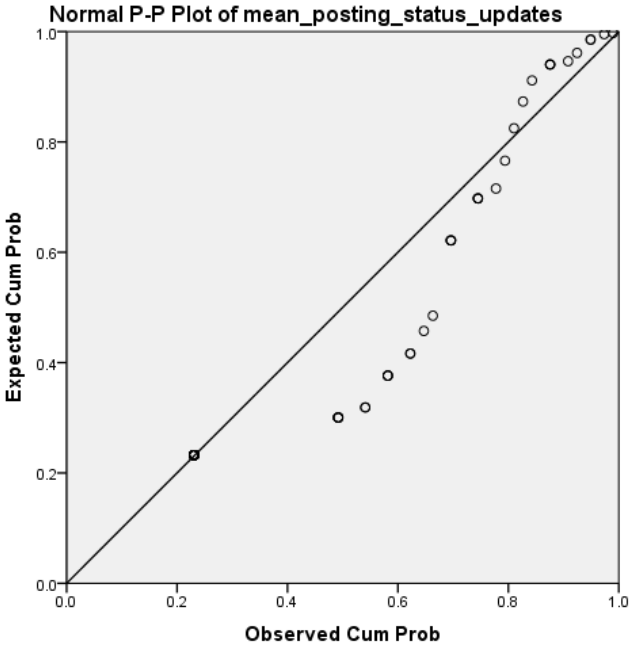


10.1.5 Pp plots of the variables with outliers removed

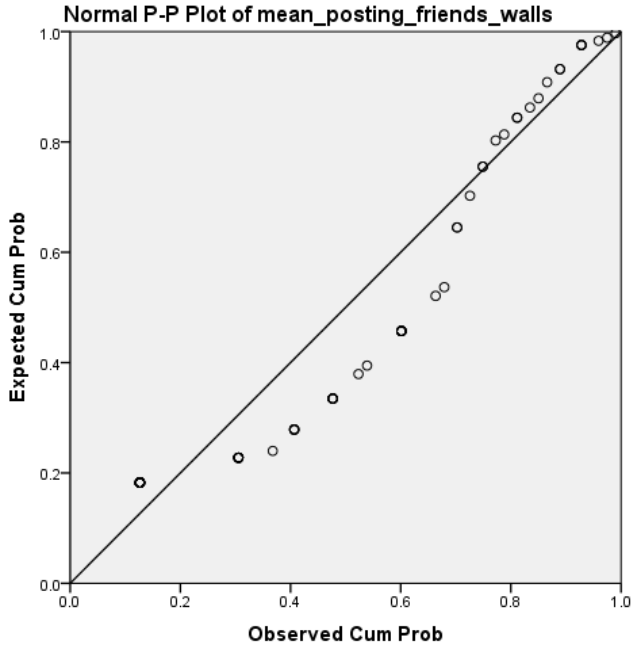
10.1.5.1 Pp plot of the mean posting pictures of the self variable with outliers removed



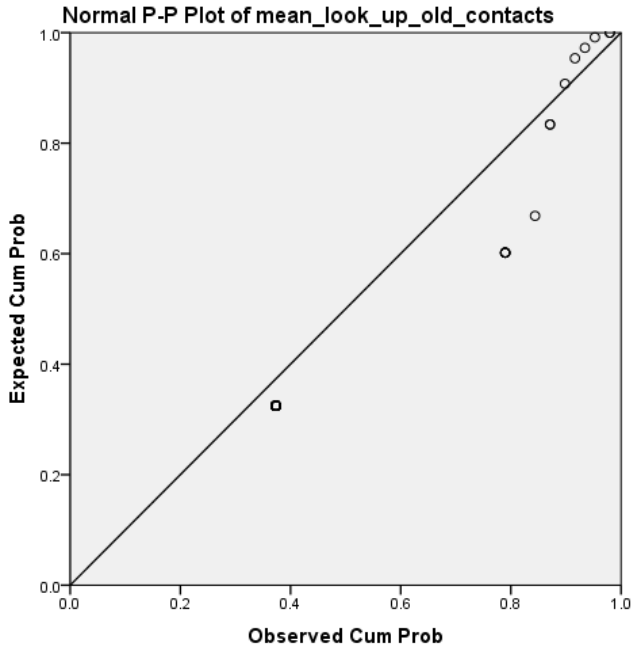
10.1.5.2 Pp plot of the mean posting status updates variable with outliers removed



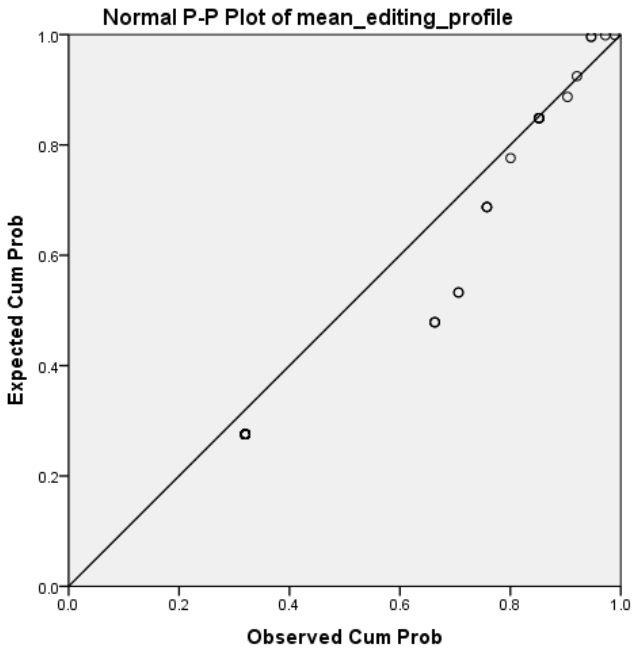
10.1.5.3 Pp plot of the mean posting on friends' walls variable with outliers removed



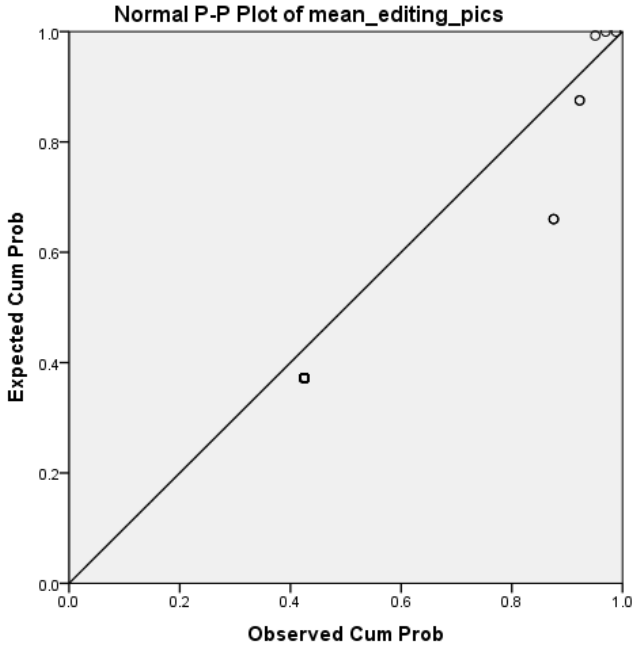
10.1.5.4 Pp plot of the looking up old contacts variable with outliers removed



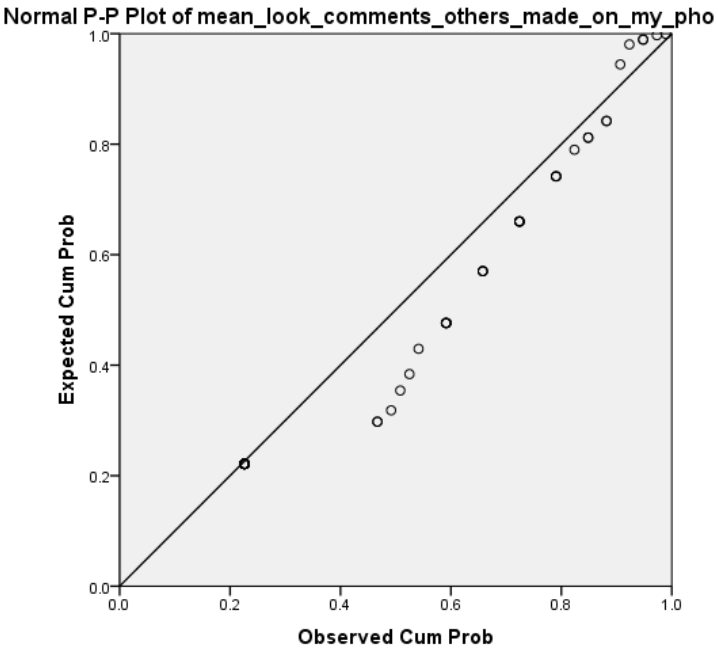
10.1.5.5 Pp plot of the mean editing profile variable with outliers removed



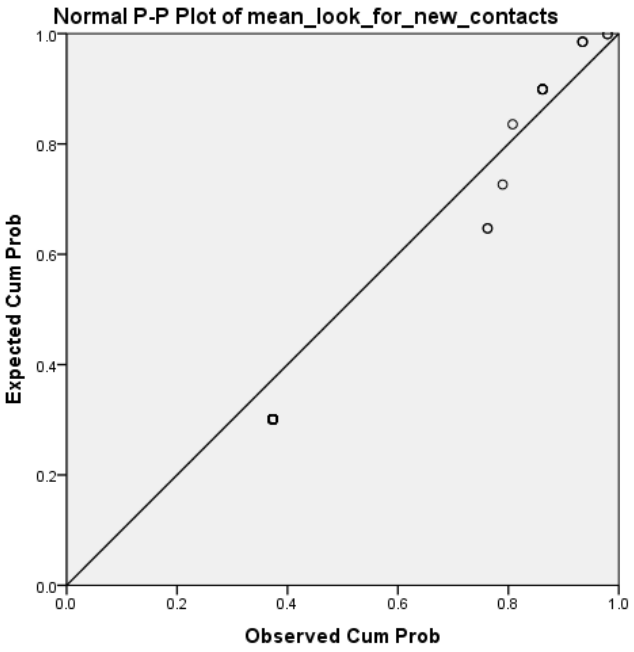
10.1.5.6 Pp plot of the mean editing pictures variable with outliers removed

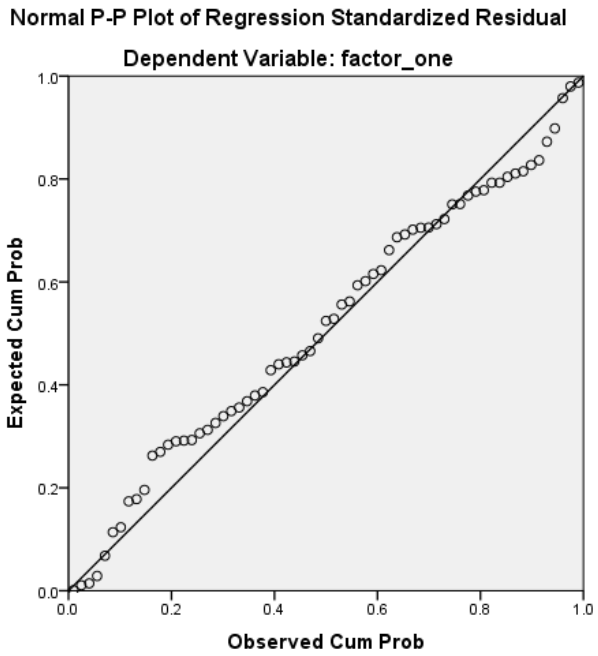


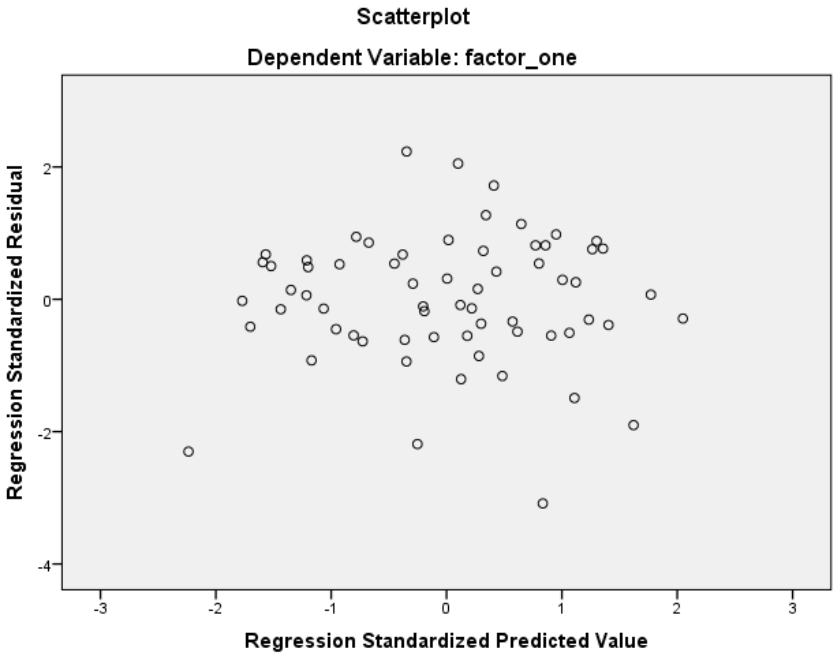
10.1.5.7 Pp plot of the mean looking at comments others made on my photos variable with outliers removed



10.1.5.8 Pp plot of the mean looking for new contacts variable with outliers removed






Scatterplot
Dependent Variable: factor_one
Regression Standardized Residual
Regression Standardized Predicted Value
2
0
-2
-4
-3
-2
-1
0
1
2
3

10.2 Chapter 4

10.2.1 Materials

10.2.1.1 UWIST mood adjective checklist (Matthews, Jones & Chamberlain 1990)

You will be given a list of words that describe the moods or feelings that people have. To complete the checklist, you are asked to indicate how well the word describes how you feel AT THE MOMENT (and not how you usually feel). You must choose one of the four possible replies; these choices are numbered from one to four. Simply circle the number that corresponds to the reply that best describes your present mood.

Work quickly and don't spend too much time thinking about your answer. The first answer you think of is the best one. Answer every word, even if you find it difficult. Answer as honestly as you can, and what is true to you. Please do not choose an answer because it seems like the right thing to say. Your answers will be kept entirely confidential.

Does the adjective describe your present mood…?

	Definitely	Slightly	Slightly not	Definitely not
1. happy	1	2	3	4
2. dissatisfied	1	2	3	4
3. energetic	1	2	3	4
4. relaxed	1	2	3	4
5. alert	1	2	3	4
6. nervous	1	2	3	4
7. passive	1	2	3	4
8. cheerful	1	2	3	4
9. tense	1	2	3	4
10. jittery	1	2	3	4
11. sluggish	1	2	3	4
12. sorry	1	2	3	4
13. composed	1	2	3	4
14. depressed	1	2	3	4
15. restful	1	2	3	4
16. vigorous	1	2	3	4
17. anxious	1	2	3	4
18. satisfied	1	2	3	4

19. un-enterprising	1	2	3	4
20. sad	1	2	3	4
21. calm	1	2	3	4
22. active	1	2	3	4
23. contented	1	2	3	4
24. tired	1	2	3	4
25. impatient	1	2	3	4
26. annoyed	1	2	3	4
27. angry	1	2	3	4
28. irritated	1	2	3	4
29. grouchy	1	2	3	4

10.2.1.2 Current Thoughts Scale (Heatherton & Polivy, 1991)

This is a questionnaire designed to measure what you are thinking at this moment. There is, of course, no right answer for any statement. The best answer is what you feel is true of yourself at this moment. Be sure to answer all of the items, even if you are not certain of the best answer. Again, answer these questions as they are true for you RIGHT NOW.

Using the following scale, place a number in the box to the right of the statement that indicates what is true for you at this moment:

I feel confident about my abilities.

1	2	3	4	5
not at all	a little bit	somewhat	very much	extremely

I am worried about whether I am regarded as a success or failure.

1	2	3	4	5
not at all	a little bit	somewhat	very much	extremely

I feel satisfied with the way my body looks right now.

1	2	3	4	5
not at all	a little bit	somewhat	very much	extremely

I feel frustrated or rattled about my performance.

1	2	3	4	5
not at all	a little bit	somewhat	very much	extremely

I feel that I am having trouble understanding things that I read.

1	2	3	4	5
not at all	a little bit	somewhat	very much	extremely

I feel that others respect and admire me.

1	2	3	4	5

not at all a little bit somewhat very much extremely

I am dissatisfied with my weight.

1 2 3 4 5

not at all a little bit somewhat very much extremely

I feel self-conscious.

1 2 3 4 5

not at all a little bit somewhat very much extremely

I feel as smart as others.

1 2 3 4 5

not at all a little bit somewhat very much extremely

I feel displeased with myself.

1 2 3 4 5

not at all a little bit somewhat very much extremely

I feel good about myself.

1 2 3 4 5

not at all a little bit somewhat very much extremely

I am pleased with my appearance right now.

1 2 3 4 5

not at all a little bit somewhat very much extremely

I am worried about what other people think of me.

1 2 3 4 5

not at all a little bit somewhat very much extremely

I feel confident that I understand things.

1 2 3 4 5

not at all a little bit somewhat very much extremely

I feel inferior to others at this moment.

1 2 3 4 5

not at all a little bit somewhat very much extremely

I feel unattractive.

1 2 3 4 5

not at all a little bit somewhat very much extremely

I feel concerned about the impression I am making.

1 2 3 4 5

not at all a little bit somewhat very much extremely

I feel that I have less scholastic ability right now than others.

1 2 3 4 5

not at all a little bit somewhat very much extremely

I feel like I'm not doing well.

1 2 3 4 5

not at all a little bit somewhat very much extremely

I am worried about looking foolish.

1 2 3 4 5

not at all a little bit somewhat very much extremely

10.2.2 SPSS outputs for t tests for second study

10.2.2.1 Social comparison tendency effects

10.2.2.1.1 Group B

Independent Samples Test[a]

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
EA_DIFF	Equal variances assumed	.099	.755	.566	30
	Equal variances not assumed			.562	27.170

Independent Samples Test[a]

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
EA_DIFF	Equal variances assumed	.575	.68254	1.20529
	Equal variances not assumed	.579	.68254	1.21514

Independent Samples Test[a]

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
EA_DIFF	Equal variances assumed	-1.77899	3.14407
	Equal variances not assumed	-1.80999	3.17507

a. group = b

10.2.2.1.2 Group C

Independent Samples Test[a]

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
TA_DIFF	Equal variances assumed	.426	.520	-1.612	26
	Equal variances not assumed			-1.561	20.657
HT_DIFF	Equal variances assumed	.769	.389	-.267	26
	Equal variances not assumed			-.260	21.161
AF_DIFF	Equal variances assumed	.172	.682	-.948	26
	Equal variances not assumed			-.903	18.891
EA_DIFF	Equal variances assumed	1.345	.257	.420	26
	Equal variances not assumed			.394	17.523

Independent Samples Test[a]

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
TA_DIFF	Equal variances assumed	.119	-1.33333	.82694
	Equal variances not assumed	.134	-1.33333	.85399
HT_DIFF	Equal variances assumed	.792	-.27083	1.01481
	Equal variances not assumed	.798	-.27083	1.04295
AF_DIFF	Equal variances assumed	.352	-.83333	.87873
	Equal variances not assumed	.378	-.83333	.92305
EA_DIFF	Equal variances assumed	.678	.45833	1.09217
	Equal variances not assumed	.698	.45833	1.16313

Independent Samples Test[a]

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
TA_DIFF	Equal variances assumed	-3.03313	.36646
	Equal variances not assumed	-3.11109	.44443
HT_DIFF	Equal variances assumed	-2.35680	1.81513
	Equal variances not assumed	-2.43876	1.89709
AF_DIFF	Equal variances assumed	-2.63959	.97292
	Equal variances not assumed	-2.76605	1.09938
EA_DIFF	Equal variances assumed	-1.78666	2.70333
	Equal variances not assumed	-1.99009	2.90676

a. group = c

10.2.2.2 Performance self-esteem effects

10.2.2.2.1 Group B

Independent Samples Test[a]

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
TA_DIFF	Equal variances assumed	1.104	.302	2.479	30
	Equal variances not assumed			2.445	19.656

Independent Samples Test[a]

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
TA_DIFF	Equal variances assumed	.019	2.98268	1.20317
	Equal variances not assumed	.024	2.98268	1.21991

Independent Samples Test[a]

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
TA_DIFF	Equal variances assumed	.52549	5.43988
	Equal variances not assumed	.43514	5.53022

a. group = b

10.2.2.2.2 Group C

Independent Samples Test[a]

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
TA_DIFF	Equal variances assumed	.709	.408	-.618	26
	Equal variances not assumed			-.602	20.837
HT_DIFF	Equal variances assumed	.082	.776	.097	26
	Equal variances not assumed			.098	25.994
AF_DIFF	Equal variances assumed	.011	.919	.220	26
	Equal variances not assumed			.217	23.735
EA_DIFF	Equal variances assumed	.625	.436	-.440	26
	Equal variances not assumed			-.427	20.008

Independent Samples Test[a]

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
TA_DIFF	Equal variances assumed	.542	-.52821	.85434
	Equal variances not assumed	.554	-.52821	.87741
HT_DIFF	Equal variances assumed	.924	.09744	1.00817
	Equal variances not assumed	.923	.09744	.99613
AF_DIFF	Equal variances assumed	.828	.19487	.88607
	Equal variances not assumed	.830	.19487	.89681
EA_DIFF	Equal variances assumed	.663	-.47692	1.08337
	Equal variances not assumed	.674	-.47692	1.11696

Independent Samples Test[a]

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
TA_DIFF	Equal variances assumed	-2.28433	1.22792
	Equal variances not assumed	-2.35374	1.29733
HT_DIFF	Equal variances assumed	-1.97488	2.16975
	Equal variances not assumed	-1.95016	2.14503
AF_DIFF	Equal variances assumed	-1.62648	2.01622
	Equal variances not assumed	-1.65716	2.04690
EA_DIFF	Equal variances assumed	-2.70383	1.74998
	Equal variances not assumed	-2.80680	1.85296

a. group = c

10.2.2.3 Appearance self-esteem effects

10.2.2.3.1 Group B

Independent Samples Test[a]

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
HT_DIFF	Equal variances assumed	1.078	.307	-2.540	30
	Equal variances not assumed			-2.816	28.985
EA_DIFF	Equal variances assumed	1.241	.274	-2.105	30
	Equal variances not assumed			-2.188	28.939

Independent Samples Test[a]

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
HT_DIFF	Equal variances assumed	.016	-3.74899	1.47587
	Equal variances not assumed	.009	-3.74899	1.33115
EA_DIFF	Equal variances assumed	.044	-2.40486	1.14245
	Equal variances not assumed	.037	-2.40486	1.09919

Independent Samples Test[a]

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
HT_DIFF	Equal variances assumed	-6.76312	-.73486
	Equal variances not assumed	-6.47155	-1.02642
EA_DIFF	Equal variances assumed	-4.73806	-.07166
	Equal variances not assumed	-4.65316	-.15655

a. group = b

10.2.2.3.2 Group C

Independent Samples Test[a]

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
TA_DIFF	Equal variances assumed	.029	.867	-.211	26
	Equal variances not assumed			-.220	21.117
HT_DIFF	Equal variances assumed	2.654	.115	1.094	26
	Equal variances not assumed			1.007	14.798
AF_DIFF	Equal variances assumed	.661	.424	-.606	26
	Equal variances not assumed			-.667	24.090
EA_DIFF	Equal variances assumed	2.169	.153	1.011	26
	Equal variances not assumed			1.193	25.992

Independent Samples Test[a]

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
TA_DIFF	Equal variances assumed	.834	-.18889	.89497
	Equal variances not assumed	.828	-.18889	.85810
HT_DIFF	Equal variances assumed	.284	1.12222	1.02619
	Equal variances not assumed	.330	1.12222	1.11404
AF_DIFF	Equal variances assumed	.550	-.55556	.91666
	Equal variances not assumed	.511	-.55556	.83322
EA_DIFF	Equal variances assumed	.321	1.12222	1.11020
	Equal variances not assumed	.243	1.12222	.94033

Independent Samples Test[a]

t-test for Equality of Means	
95% Confidence Interval of the Difference	
Lower	Upper

TA_DIFF	Equal variances assumed	-2.02853	1.65076
	Equal variances not assumed	-1.97280	1.59502
HT_DIFF	Equal variances assumed	-.98713	3.23158
	Equal variances not assumed	-1.25513	3.49957
AF_DIFF	Equal variances assumed	-2.43978	1.32867
	Equal variances not assumed	-2.27491	1.16380
EA_DIFF	Equal variances assumed	-1.15983	3.40427
	Equal variances not assumed	-.81068	3.05512

a. group = c

10.2.2.4 Social self-esteem effects

10.2.2.4.1 Group A

Independent Samples Test[a]

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
TA_DIFF	Equal variances assumed	1.025	.319	.210	31
	Equal variances not assumed			.212	29.632
HT_DIFF	Equal variances assumed	.001	.972	-1.054	31
	Equal variances not assumed			-1.053	30.769
AF_DIFF	Equal variances assumed	.135	.716	.059	31
	Equal variances not assumed			.058	30.077
EA_DIFF	Equal variances assumed	1.895	.179	-1.395	31
	Equal variances not assumed			-1.415	26.930

Independent Samples Test[a]

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
TA_DIFF	Equal variances assumed	.835	.25368	1.20721
	Equal variances not assumed	.834	.25368	1.19687
HT_DIFF	Equal variances assumed	.300	-1.62132	1.53860
	Equal variances not assumed	.301	-1.62132	1.53976
AF_DIFF	Equal variances assumed	.954	.07353	1.25348
	Equal variances not assumed	.954	.07353	1.25792
EA_DIFF	Equal variances assumed	.173	-2.01103	1.44146
	Equal variances not assumed	.169	-2.01103	1.42152

Independent Samples Test[a]

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
TA_DIFF	Equal variances assumed	-2.20845	2.71580
	Equal variances not assumed	-2.19192	2.69928
HT_DIFF	Equal variances assumed	-4.75932	1.51667
	Equal variances not assumed	-4.76263	1.51998
AF_DIFF	Equal variances assumed	-2.48297	2.63003
	Equal variances not assumed	-2.49521	2.64227
EA_DIFF	Equal variances assumed	-4.95090	.92884
	Equal variances not assumed	-4.92810	.90604

a. group = a

10.2.2.4.2 Group C

Independent Samples Test[a]

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
TA_DIFF	Equal variances assumed	6.169	.020	-.144	26
	Equal variances not assumed			-.133	15.721
HT_DIFF	Equal variances assumed	8.770	.006	1.472	26
	Equal variances not assumed			1.360	15.997
AF_DIFF	Equal variances assumed	1.841	.187	-.374	26
	Equal variances not assumed			-.351	17.439
EA_DIFF	Equal variances assumed	.005	.944	-1.253	26
	Equal variances not assumed			-1.243	23.096

Independent Samples Test[a]

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
TA_DIFF	Equal variances assumed	.886	-.12500	.86695
	Equal variances not assumed	.896	-.12500	.94152
HT_DIFF	Equal variances assumed	.153	1.43750	.97631
	Equal variances not assumed	.193	1.43750	1.05696
AF_DIFF	Equal variances assumed	.711	-.33333	.89141
	Equal variances not assumed	.730	-.33333	.95015
EA_DIFF	Equal variances assumed	.221	-1.33333	1.06421
	Equal variances not assumed	.226	-1.33333	1.07297

Independent Samples Test[a]

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
TA_DIFF	Equal variances assumed	-1.90704	1.65704
	Equal variances not assumed	-2.12381	1.87381
HT_DIFF	Equal variances assumed	-.56933	3.44433
	Equal variances not assumed	-.80319	3.67819
AF_DIFF	Equal variances assumed	-2.16564	1.49898
	Equal variances not assumed	-2.33413	1.66746
EA_DIFF	Equal variances assumed	-3.52085	.85418
	Equal variances not assumed	-3.55243	.88576

a. group = c

10.3 Chapter 5

10.3.1 Codebook

Participant number_____

Percentage **positive** emotions in last ten status updates	Percentage **negative** emotions in last ten status updates	Percentage **tentative** language in last ten status updates	Percentage **certain** language in last ten status updates	Number of **Facebook friends** (taken from Facebook profile)

10.3.2 Tabular representation of the linguistic categorisation as determined by Language Inquiry and Word Count (LIWC) software

The following abbreviations are used in the output over the page: Word count (WC), positive emotions ('posemo') negative emotions ('negemo') anxious language ('anx') tentative language ('tentat') and certain language ('certain'). 'Filename' denotes the different participants e.g. p1 refers to Participant 1.

For example, the output over the page illustrates that Participant 1 wrote a total of 96 words. Of these words 8.33% were positive emotions, 2.08% negative emotions and anxious language at 0%. Tentative and certain language were 0% and 2.08% respectively.

Figure 1*. Sample output of linguistic categorisation of status updates*

Filename	WC	posemo	negemo	anx	tentat	certain
p1.docx	96	8.33	2.08	0	0	2.08
p10.docx	49	12.24	0	0	8.16	2.04
p100.docx	42	9.52	0	0	2.38	0
p101 status.doc	49	4.08	0	0	2.04	2.04
p102 status.doc	9	11.11	0	0	0	0
p103 status.doc	20	0	5	5	5	0
p104 status.doc	2	50	0	0	0	0
p105.docx	34	0	8.82	0	2.94	0
p106.docx	20	15	0	0	5	0
p107.docx	9	0	11.11	11.11	0	0
p108.docx	64	3.12	3.12	1.56	0	1.56
p11.docx	15	6.67	0	0	0	0
p110.docx	51	3.92	3.92	0	0	1.96
p113.docx	267	9.36	3.75	1.12	1.12	2.25

10.3.3 Examples of the original status updates used

Below are examples of the original status updates obtained from participants' Facebook pages. Names of individuals and organisations have been redacted for reproduction in the appendices.

10.3.3.1 Participant 5 status updates

[redacted] with her new jewels on, been spoilt again by [redacted] xxx

[redacted] at nursery, been for a run, housework and then off to meet one of my bff [redacted] in town.

— feeling happy. Usher was amazing start to finish, best concert I have ever been too!!! USHER RAYMOND BABY!

Usher baby, such a good kisser! X

Yummy x

Why do I always get up early on my days off, can't sleep in annoying! On plus side already been for a run, off to meet friend for coffee in Merryhill and promised to take [redacted] to the library. Then got a date with Usher tonight, cant wait, sooooooooo excited!!!

En route to gym eating cabury cream egg biscuits, I sooooo wasn't born to be thin! Well that's what I am telling myself x

Looks sooooooooo delicious

[redacted] put a little dance show on for me

Great time at the biggest event of the year, lovely to catch up with everyone xxx

10.3.3.2 Participant 20 status updates

Just want to say thank you to everyone who sent messages of support yesterday.

It's been a hard year, but Dad didn't want us sitting around moping, he gave us all a fantastic life when he was here, and he would want us to continue living it. Your support has got us all through this year, so thank you from the bottom of my heart. You all know who you are xxx

So, so happy today So proud of [redacted] and [redacted]! My beautiful little niece has arrived safely weighing a healthy 7lb 10oz You're gonna be fantastic parents Can't contain my excitement lol. So very proud of you both! Love you all xxx

feeling emotional.

So last night was a late one for [redacted] 21st..

.tonight was a late one with getting our boogie on at the barn dance. Don't know how I managed work today, tomorrows morning shift will be a killer. Worth it tho!

feeling pumped

Always a friend

See [redacted] I could do it ... The world is stopping me though!

It's natures fault...

10.3.3.3 Participant 58 status updates

Love my babies...

Poshing it up in London.

He did it.

feeling proud.

[redacted] is doing a tally chart for maths. Her idea is to find out what people choose to drink first thing in the morning/with breakfast. I would really appreciate you could reply to this and let me know what you drink. Thank you in advance. X

Just had an email from school...please share...

[redacted] Junior School : Information from Mrs [redacted] from Local Police

Suspicious Incidents in Shrewsbury

Following two reported incidents in Shrewsbury very recently, and in the light of recent reports in the local press, I should clarify police/LA advice in these matters.

The Local Authority have recently received substantiated reports of characters acting suspiciously on or around specific school sites.

At [redacted] Primary & Nursery School a man spotted near the school has been described as being white and possibly of Eastern European origin. He is of average height with a muscular build and aged between 30 and 40. He was said to be wearing a dark zip-up hoody and tracksuit bottoms and trainers.

At [redacted] Primary **School**, an unauthorised man on the premises, who left in a hurry after realising he had been noticed, was described as a white male, 5'10", stocky build, short cropped 'mousey' hair and was wearing a fawn coloured sweat top with brown trousers.

The police do not believe there is any real cause for concern at present, but it is very important to take these incidents seriously and that all school staff and parents remain vigilant in the interests of both personal safety and asset security.

In light of this information, please ensure that the drop-off and pick up arrangements for your children have been carefully considered and where possible, you accompany your child/children to/from the school playground.

Such incidents as these above can happen anywhere in the county and, therefore, should anyone witness anything suspicious in their area, they should contact the police by dialling 101 and report their concerns

And so it begins.....excited and nervous. Oh the chaos!!!

Well it's official. After 17 years I am no longer a nurse. My pin expired today, and no plans to renew it.

The end of an era, and the beginning of a new adventure. I completed my enrolment at uni today, ready to start next month...

feeling excited.

10.3.4 Demonstrations of modifications to status updates.

The status updates given in the examples above are reproduced below, with the modifications displayed to demonstrate changes to text undertaken by the experimenter.

10.3.4.1 Participant 58 modified status updates

Love my babies...

Poshing it up in London.

He did it.

feeling proud.

[redacted] is doing a tally chart for maths. Her idea is to find out what people choose to drink first thing in the morning/with breakfast. I would really appreciate you could reply to this and let me know what you drink. Thank you in

Details of this message removed

~~Just had an email from school...please share...~~

~~[redacted] Junior School : Information from Mrs [redacted] from Local Police~~

~~Suspicious Incidents in Shrewsbury~~

~~Following two reported incidents in Shrewsbury very recently, and in the light of recent reports in the local press, I should clarify police/LA advice in these matters.~~

~~The Local Authority have recently received substantiated reports of characters acting suspiciously on or around specific school sites.~~

~~At [redacted] Primary & Nursery School a man spotted near the school has been described as being white and possibly of Eastern European origin. He is of average height with a muscular build and aged between 30 and 40. He was said to be wearing a dark zip-up hoody and tracksuit bottoms and trainers.~~

~~At [redacted] Primary School, an unauthorised man on the premises, who left in a hurry after realising he had been noticed, was described as a white male, 5'10",~~

~~stocky build, short cropped 'mousey' hair and was wearing a fawn coloured sweat top with brown trousers.~~

~~The police do not believe there is any real cause for concern at present, but it is very important to take these incidents seriously and that all school staff and parents remain vigilant in the interests of both personal safety and asset security.~~

~~In light of this information, please ensure that the drop-off and pick up arrangements for your children have been carefully considered and where possible, you accompany your child/children to/from the school playground.~~

~~Such incidents as these above can happen anywhere in the county and, therefore, should anyone witness anything suspicious in their area, they should contact the police by dialling 101 and report their concerns~~

And so it begins.....excited and nervous. Oh the chaos!!!

Well it's official. After 17 years I am no longer a nurse. My pin expired today, and no plans to renew it.

The end of an era, and the beginning of a new adventure. I completed my enrolment at uni today, ready to start next month...

feeling excited.

10.3.4.2 Participant 20 modified status updates

Just want to say thank you to everyone who sent messages of support yesterday.

It's been a hard year, but Dad didn't want us sitting around moping, he gave us all a fantastic life when he was here, and he would want us to continue living it. Your support has got us all through this year, so thank you from the bottom of my heart. You all know who you are xxx

So, so happy today So proud of [redacted] and [redacted]! My beautiful little niece has arrived safely weighing a healthy 7lb 10oz You're gonna be fantastic parents Can't contain my excitement lol. So very proud of you both! Love you all xxx

feeling emotional.

So last night was a late one for [redacted] 21st...

tonight was a late one with getting our boogie on at the barn dance. Don't know how I managed work today, tomorrows morning shift will be a killer. Worth it tho!

feeling pumped

Always a friend

Additional letters removed

See [redacted] ... I could do it ... The world is stopping me though!

It's natures fault...

10.3.4.3 Participant 5 modified status updates

[redacted] with her new jewels on, been spoilt again by [redacted] xxx

[redacted] at nursery, been for a run, housework and then off to meet one of my bff [redacted] in town.

— feeling happy. Usher was amazing start to finish, best concert I have ever been too!!! USHER RAYMOND BABY!

Usher baby, such a good kisser! X

Yummy x

Why do I always get up early on my days off, can't sleep in annoying! On plus side already been for a run, off to meet friend for coffee in Merryhill and promised to take [redacted] to the library. Then got a date with Usher tonight, can't wait, so excited!!!

En route to gym eating cabury cream egg biscuits, I so wasn't born to be thin! Well that's what I am telling myself x

Looks ~~so delicious~~

Additional letters removed

[redacted] put a little dance show on for me

Great time at the biggest event of the year, lovely to catch up with everyone xxx

10.3.5 Histograms displaying graphical representations of skewness and kurtosis of the dependent variables in the third study

Below in figures 2 to 6 are histograms of the distribution of the dependent variables used in the third study. Tabachnick and Fidell, (2012) recommend visual inspection of a distribution via histogram, rather than evaluating values of skew and kurtosis. These histograms are employed to present a graphical representation of skewness and demonstrate why these variables were sufficiently skewed to employ bootstrapping.

All of these histograms demonstrate varying severity of skew (the symmetry of the distribution, (Pallant, 2016) all to the left, indicative of positive skew, as well as levels of kurtosis – a measure of abnormality of the 'peakedness' of the distribution (Pallant, 2016).

Figure 2*. Histogram depicting percentage of 'positive emotions' used within the status updates*

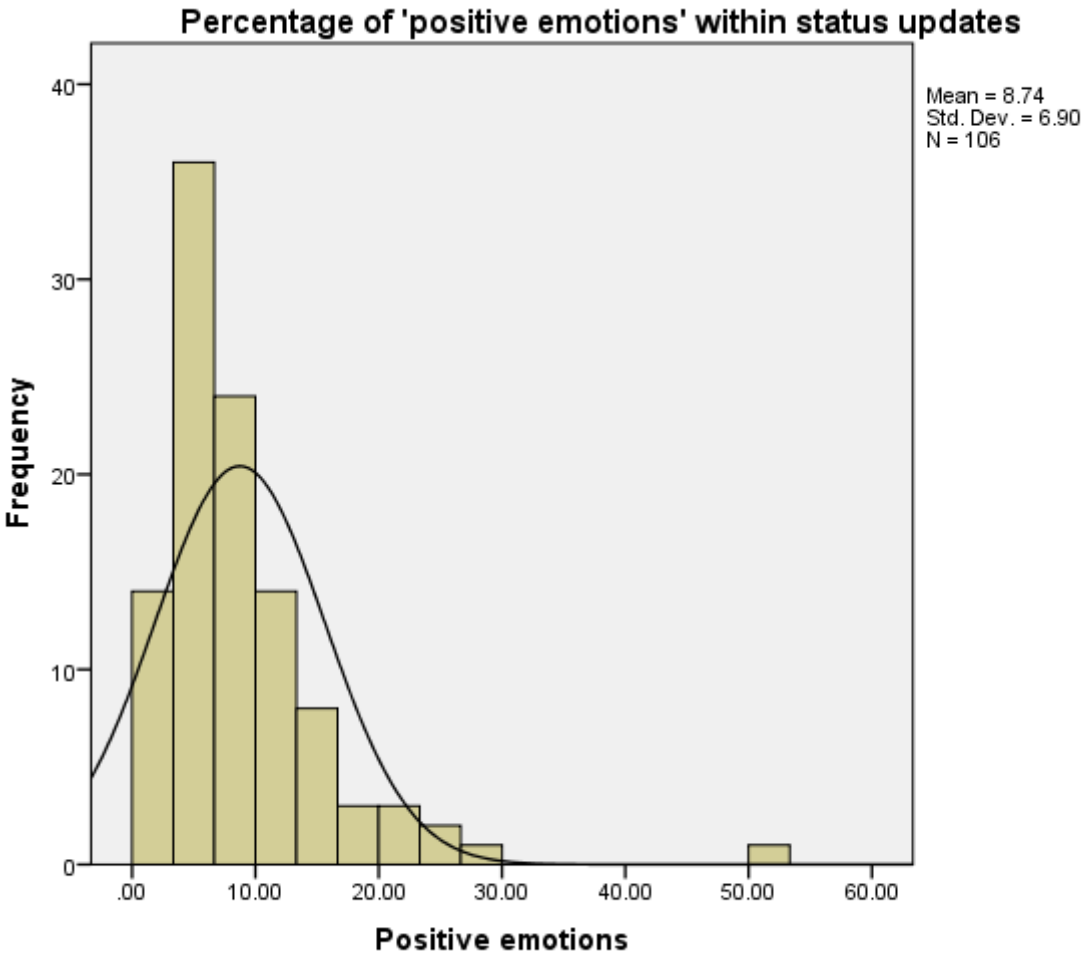


Figure 3*. **Histogram depicting percentage of 'negative emotions' used within the status updates***

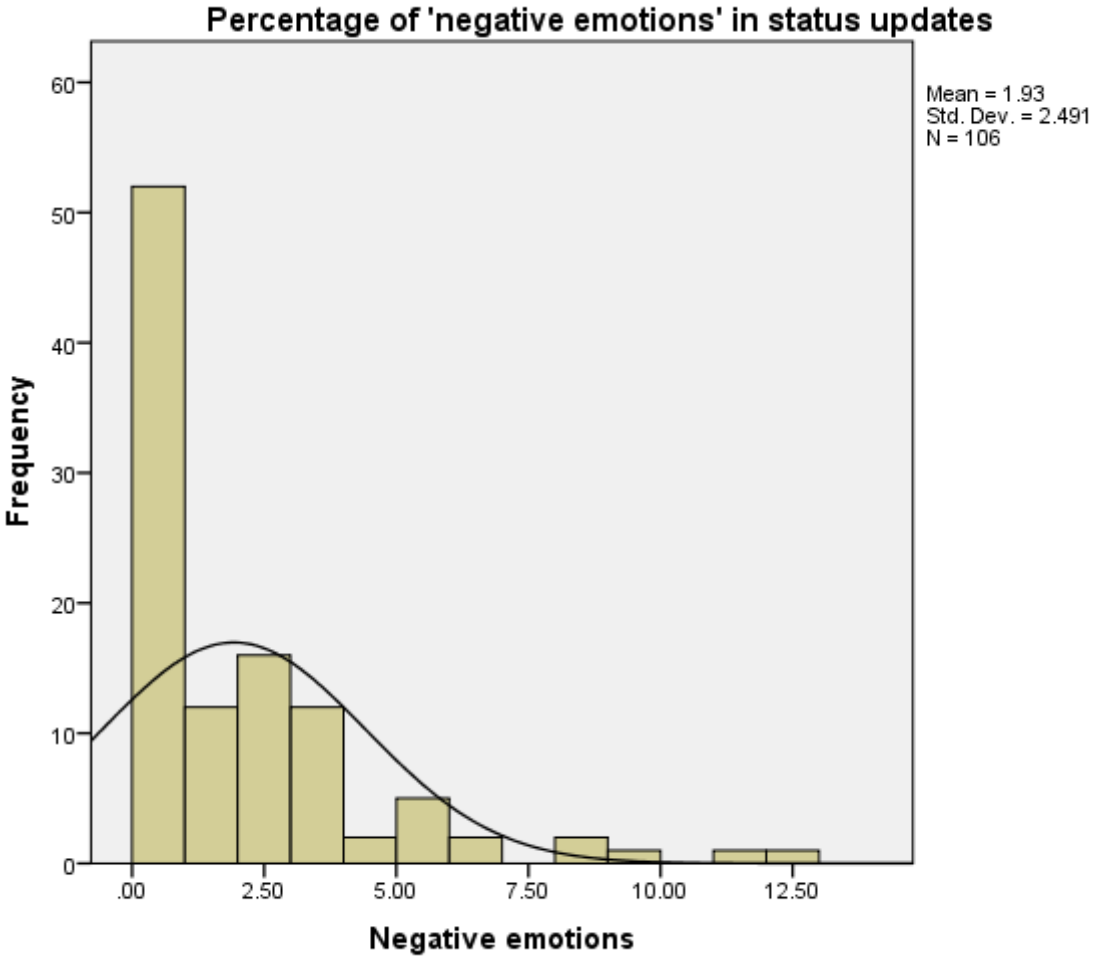


Figure 4*. Histogram depicting percentage of 'tentative language' used within the status updates*

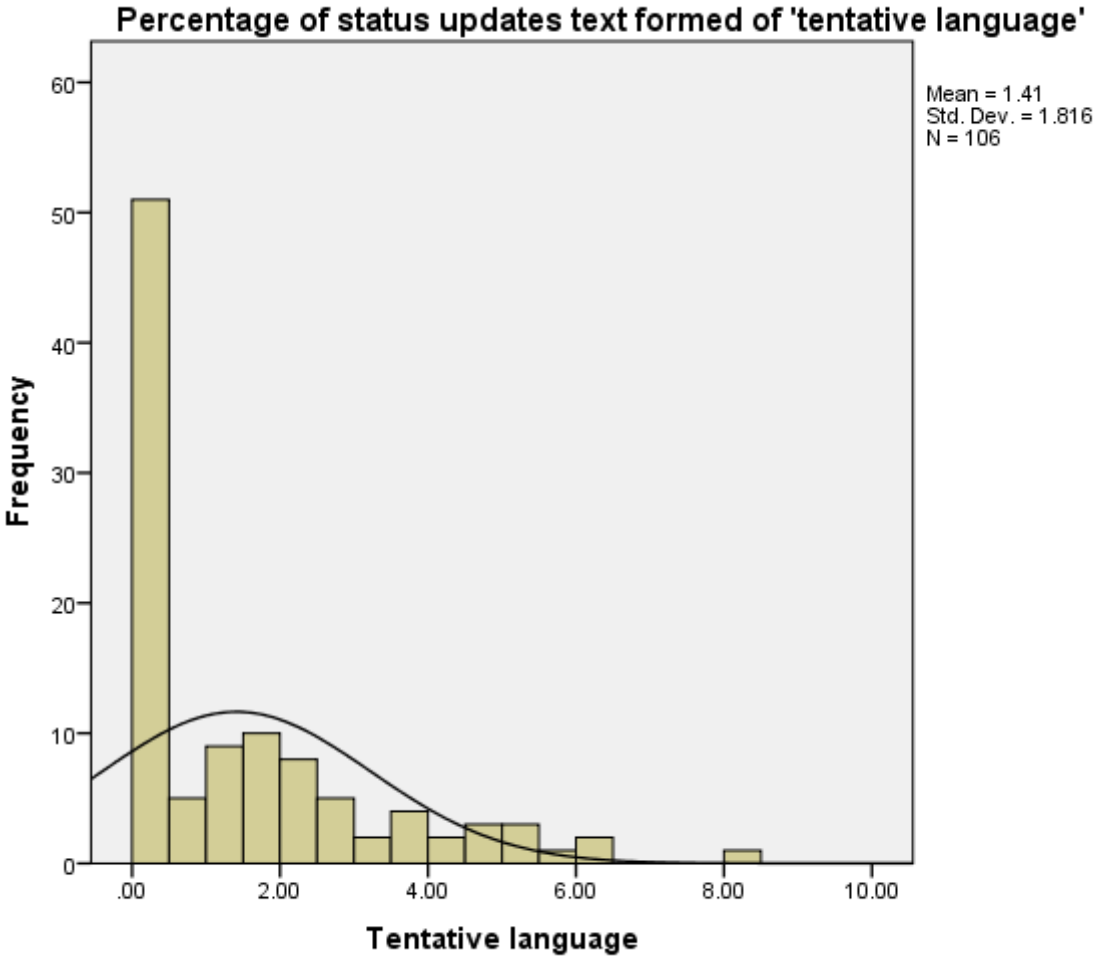


Figure 5*. Histogram depicting percentage of 'certain' language used within the status updates*

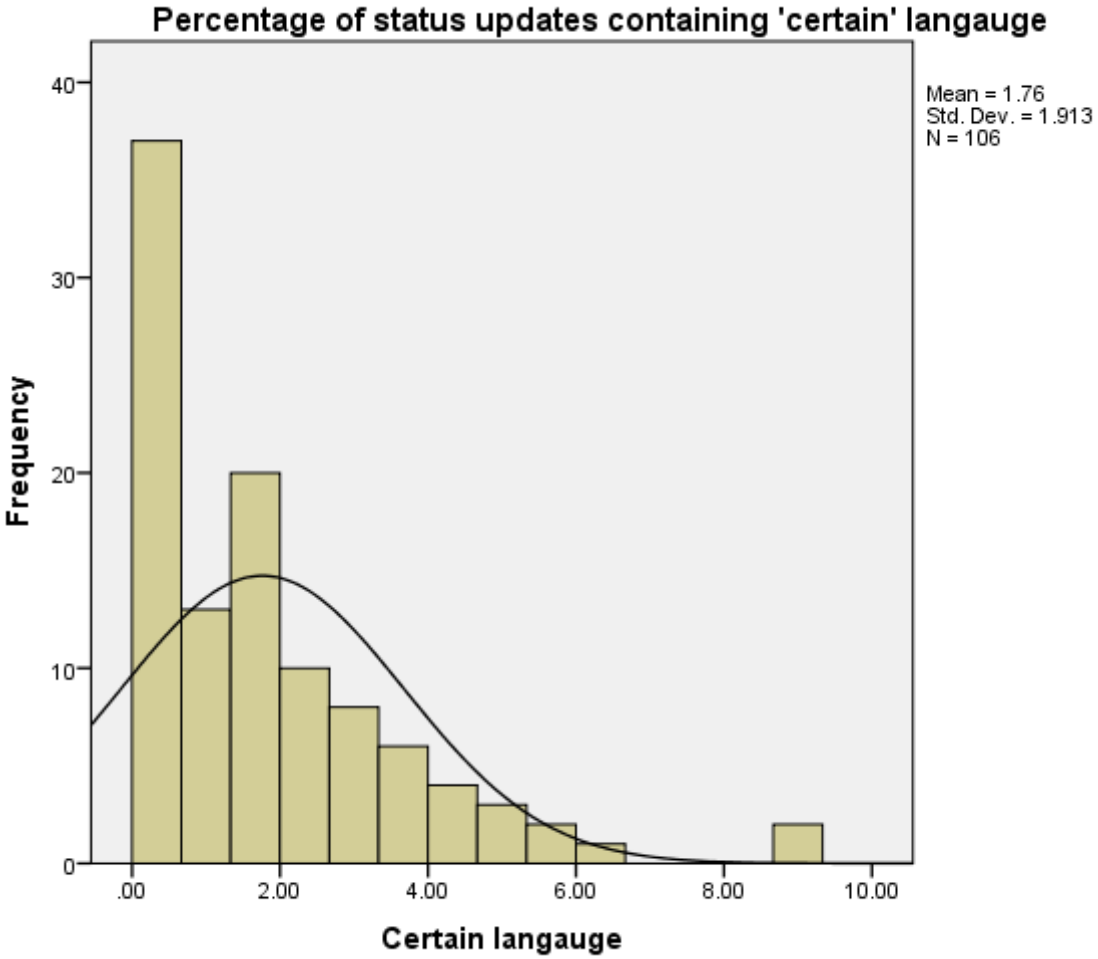
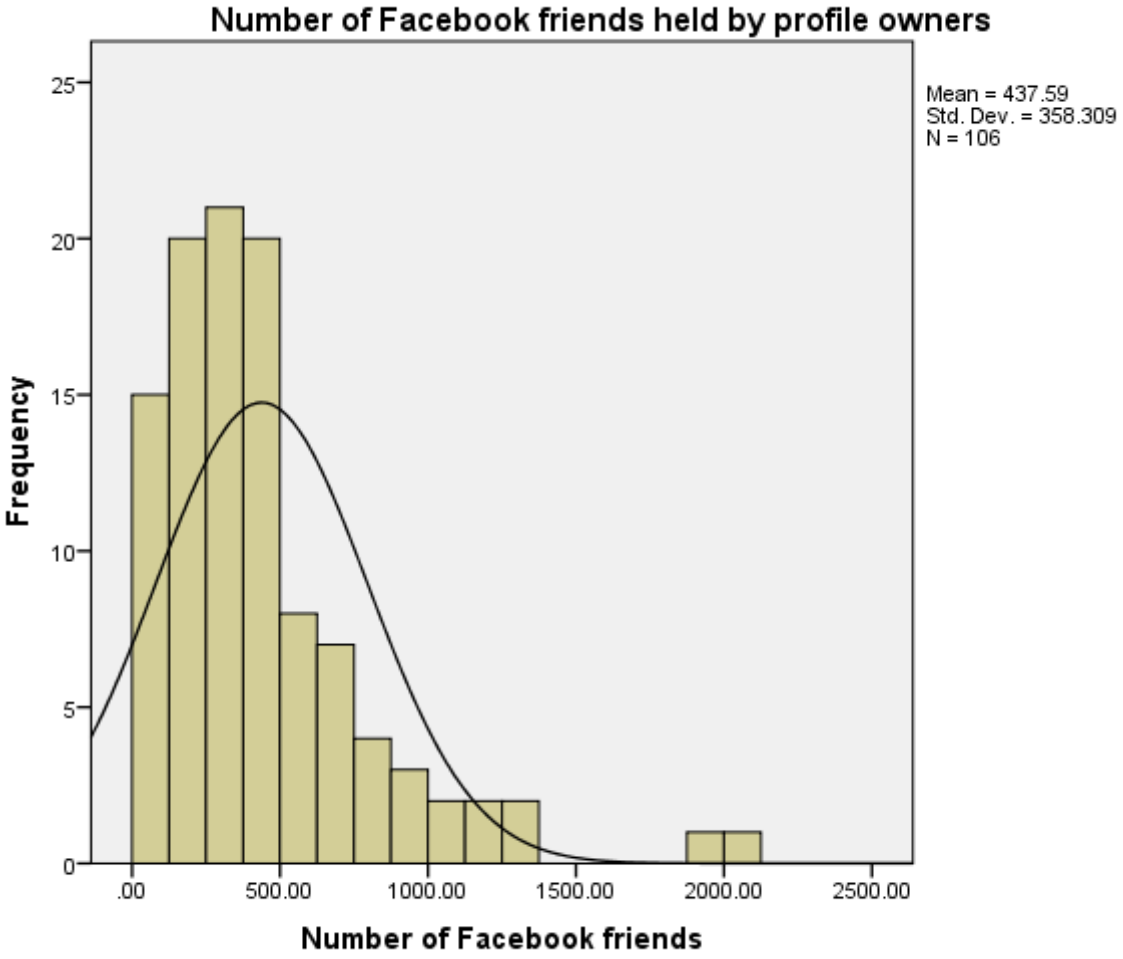


Figure 6*. **Histogram depicting number of Facebook friends held by profile owners***



10.3.6 SPSS output of the bootstrapped Multiple Regression analyses used in the third study

10.3.6.1 Bootstrapped Multiple Regression outputs with positive emotions ('posemo') as the dependent variable and self evaluation scores as predictors.

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	self_esteem, incom_score, clarity_score[b]	.	Enter

a. Dependent Variable: posemo

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.298[a]	.089	.062	6.68226

a. Predictors: (Constant), self_esteem, incom_score, clarity_score

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	444.464	3	148.155	3.318	.023[b]
	Residual	4554.563	102	44.653		
	Total	4999.027	105			

a. Dependent Variable: posemo

b. Predictors: (Constant), self_esteem, incom_score, clarity_score

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	5.761	5.698		1.011	.314	-5.542	17.064
	clarity_score	.008	.095	.012	.087	.930	-.180	.196
	incom_score	-.086	.115	-.075	-.743	.459	-.315	.143
	self_esteem	.304	.149	.263	2.043	.044	.009	.598

a. Dependent Variable: posemo

Bootstrap for Coefficients

Model		B	Bootstrap[a]				
			Bias	Std. Error	Sig. (2-tailed)	BCa 95% Confidence Interval	
						Lower	Upper
1	(Constant)	5.761	-.230	6.098	.341	-4.039	16.821
	clarity_score	.008	.001	.071	.916	-.141	.148
	incom_score	-.086	.007	.160	.583	-.489	.231
	self_esteem	.304	-.006	.149	.044	.041	.581

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

10.3.6.2 Bootstrapped Multiple Regression outputs with number of tentative language ('tentat') as the dependent variable and self evaluation scores as predictors.

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	self_esteem, incom_score, clarity_score[b]	.	Enter

a. Dependent Variable: tentat

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.074[a]	.005	-.024	1.83704

a. Predictors: (Constant), self_esteem, incom_score, clarity_score

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.899	3	.633	.188	.905[b]
	Residual	344.222	102	3.375		
	Total	346.122	105			

a. Dependent Variable: tentat

b. Predictors: (Constant), self_esteem, incom_score, clarity_score

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.677	1.567		.432	.667
	clarity_score	.016	.026	.086	.613	.541
	incom_score	.016	.032	.053	.496	.621
	self_esteem	-.022	.041	-.073	-.546	.586

a. Dependent Variable: tentat

Bootstrap for Coefficients

Model		B	Bootstrap[a]				
			Bias	Std. Error	Sig. (2-tailed)	BCa 95% Confidence Interval	
						Lower	Upper
1	(Constant)	.677	-.057	1.520	.638	-2.085	3.899
	clarity_score	.016	-.003	.027	.531	-.038	.056
	incom_score	.016	.002	.031	.597	-.057	.086
	self_esteem	-.022	.004	.038	.523	-.098	.066

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

10.3.6.3 Bootstrapped Multiple Regression outputs with number of 'certain' language as the dependent variable and self evaluation scores as predictors.

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	self_esteem, incom_score, clarity_score[b]	.	Enter

a. Dependent Variable: certain

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.163[a]	.027	-.002	1.91513

a. Predictors: (Constant), self_esteem, incom_score, clarity_score

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.

1	Regression	10.251	3	3.417	.932	.428[b]
	Residual	374.107	102	3.668		
	Total	384.358	105			

a. Dependent Variable: certain

b. Predictors: (Constant), self_esteem, incom_score, clarity_score

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.208	1.633		.128	.899
	clarity_score	-.016	.027	-.082	-.589	.557
	incom_score	.044	.033	.139	1.328	.187
	self_esteem	.031	.043	.095	.717	.475

a. Dependent Variable: certain

Bootstrap for Coefficients

Model		B	Bootstrap[a]				
			Bias	Std. Error	Sig. (2-tailed)	BCa 95% Confidence Interval	
						Lower	Upper
1	(Constant)	.208	.062	1.997	.908	-3.853	4.377
	clarity_score	-.016	-.001	.028	.566	-.071	.039
	incom_score	.044	-.002	.040	.275	-.030	.118
	self_esteem	.031	.001	.042	.447	-.040	.123

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

10.3.6.4 Bootstrapped Multiple regression outputs with number of negative emotions (`negemo') as the dependent variable and self evaluation scores as predictors.

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	self_esteem, incom_score, clarity_score[b]	.	Enter

a. Dependent Variable: negemo

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.078[a]	.006	-.023	2.52011

a. Predictors: (Constant), self_esteem, incom_score, clarity_score

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.975	3	1.325	.209	.890[b]
	Residual	647.797	102	6.351		
	Total	651.771	105			

a. Dependent Variable: negemo

b. Predictors: (Constant), self_esteem, incom_score, clarity_score

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.912	2.149		.890	.376
	clarity_score	.024	.036	.095	.674	.502
	incom_score	-.003	.044	-.008	-.080	.937
	self_esteem	-.040	.056	-.096	-.713	.478

a. Dependent Variable: negemo

Bootstrap for Coefficients

Model		B	Bootstrap[a]				
			Bias	Std. Error	Sig. (2-tailed)	BCa 95% Confidence Interval	
						Lower	Upper
1	(Constant)	1.912	-.079	1.884	.321	-1.369	5.483
	clarity_score	.024	-.001	.029	.428	-.023	.076
	incom_score	-.003	.001	.040	.913	-.089	.083
	self_esteem	-.040	.003	.052	.467	-.168	.077

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

10.3.6.5 Bootstrapped Multiple Regression outputs with number of Facebook friends ('n_friends') as the dependent variable and self evaluation scores as predictors.

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	self_esteem, incom_score, clarity_score[b]	.	Enter

a. Dependent Variable: n_friends

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.306[a]	.094	.067	346.07393

a. Predictors: (Constant), self_esteem, incom_score, clarity_score

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1264244.541	3	421414.847	3.519	.018[b]
	Residual	12216251.016	102	119767.167		
	Total	13480495.557	105			

a. Dependent Variable: n_friends

b. Predictors: (Constant), self_esteem, incom_score, clarity_score

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	313.957	295.116		1.064	.290	-271.404	899.318
	clarity_score	-8.976	4.910	-.245	-1.828	.070	-18.715	.762
	incom_score	10.212	5.976	.173	1.709	.091	-1.642	22.066
	self_esteem	4.821	7.696	.080	.626	.532	-10.445	20.087

a. Dependent Variable: n_friends

Bootstrap for Coefficients

Model		B	Bootstrap[a]				
			Bias	Std. Error	Sig. (2-tailed)	BCa 95% Confidence Interval	
						Lower	Upper
1	(Constant)	313.957	16.189	236.224	.192	-115.549	818.199
	clarity_score	-8.976	-.162	4.473	.040	-18.314	-1.051
	incom_score	10.212	-.319	5.385	.048	1.002	19.794
	self_esteem	4.821	.071	6.988	.485	-7.208	18.606

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

10.3.7 Examples of the about me profiles that were analysed within the fourth study

10.3.7.1 Participant 96 actual self

Hi! I'm a graduate student studying psychology, and a lot of my time and energy goes into that. I'm very conscientious about my work, and tend to plan things out and get things done ahead of time. However, my friends tell me that I'm good at helping them feel okay about their choices because I don't tend to feel guilty about taking care of myself and considering my own needs when I'm deciding whether to take something on and encouraging them to do the same.

I tend to be analytical and logical about things and approach things from a pragmatic point of view, but I also have a good sense of humor and don't take life too seriously in general. So although I might offer my perspective on things, I try not to be judgmental about other peoples' choices and tend to offer my opinion only when asked. I'm fairly introverted and listen more than I talk.

I'm friendly and try to be generous with the people around me, but I know that I could stand to be more assertive sometimes too, because I'm not always direct about saying what I really think or what I really want. I enjoy keeping up with pop culture and other media, and I tend to be a giant nerd about the things that I like, spending a lot of time watching, talking about, and thinking about the things that I take an interest in. Oh, and I also have cat that I love and am prone to posting a few too many photos of on social media (sorry!).

10.3.7.2 Participant 42 ideal self

I am an outgoing person who is the life and soul of the party. I spend most of my time going out with friends and partying all night long. When I am not partying I'm working in a recruitment business where I am the partner earning a substantial amount of money. I take my two pugs everywhere with me, they are called Cosmo and Pedro and they are practically my children.

My house is rather large so when I get bored I just invite my friends over and we have a few drinks listening to music. I got to the gym at least 5 times a week and have not gotten to the desired size that I wanted. I have a considerable amount of free time which I spend reading or at my local health spa. Me and my partner go on three holidays a year abroad and have recently come back from Italy, where we have gorgeous food and enjoyed the sun.

I eat out at the best restaurants and have many friends in the food industry. My new BMW M1 is my newest addition, and was the first thing I bought with my promotion, it's a far cry away from all the nights I spent slaving at University and Asda. I have so much more time to go and watch movies at the cinema and seeing my favourite bands live. Overall, my life is great at the minute, I have all the time, money, company and means that I need.

10.3.8 Output of LIWC analysis for selected participants displaying information around Actual Self Presentations (ASP) and Ideal Self Presentations (ISP) as well as difference scores

Participant number	Word count In ASP	Percentage positive emotions In ASP	Anxiety words percentage in ASP	Ideal self word count In ISP	Percentage positive emotions ISP	Anxiety words percentage In ISP	Difference score positive emotions	Difference score anxiety words
42.00	265.00	7.55	1.13	252.00	5.16	0.00	-2.39	-1.13
96.00	266.00	5.64	0.38	255.00	8.24	0.39	2.60	0.01

10.3.9 SPSS outputs of the t tests for the fourth study

10.3.9.1 Self-esteem bootstrapped t test, comparing differences in amount of anxiety words used in actual and ideal self presentation by low and high self esteem

Group Statistics

				Bootstrap[a]			
						BCa 95% Confidence Interval	
	Percentile Group of se_score		Statistic	Bias	Std. Error	Lower	Upper
anx_diff	1	N	66				
		Mean	-.2953	.0001	.0968	-.4784	-.1135
		Std. Deviation	.80206	-.01140	.12345	.58358	1.01007
		Std. Error Mean	.09873				
	2	N	63				
		Mean	-.0589	.0004	.0662	-.1873	.0663
		Std. Deviation	.51177	-.00617	.07034	.36811	.64232
		Std. Error Mean	.06448				

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
anx_diff	Equal variances assumed	8.825	.004	-1.985	127
	Equal variances not assumed			-2.005	111.086

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
anx_diff	Equal variances assumed	.049	-.23641	.11909
	Equal variances not assumed	.047	-.23641	.11792

Independent Samples Test

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
anx_diff	Equal variances assumed	-.47206	-.00076
	Equal variances not assumed	-.47007	-.00276

Bootstrap for Independent Samples Test

			Bootstrap[a]		
		Mean Difference	Bias	Std. Error	Sig. (2-tailed)
anx_diff	Equal variances assumed	-.23641	-.00033	.11678	.042
	Equal variances not assumed	-.23641	-.00033	.11678	.047

Bootstrap for Independent Samples Test

		Bootstrap	
		BCa 95% Confidence Interval	
		Lower	Upper
anx_diff	Equal variances assumed	-.46815	-.00705
	Equal variances not assumed	-.46815	-.00705

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

10.3.9.2 Self-concept clarity bootstrapped t test, comparing differences in amount of positive emotions used in actual and ideal self presentation by low and high self concept clarity

Group Statistics

	Percentile Group of Clarity_score		Statistic	Bootstrap[a] Bias	Bootstrap[a] Std. Error	Bootstrap[a] BCa 95% Confidence Interval Lower	Bootstrap[a] BCa 95% Confidence Interval Upper
posemo_diff	1	N	61				
		Mean	3.1372	.0130	1.2472	.9838	5.6554
		Std. Deviation	9.74963	-.33457	2.36086	4.76928	13.52095
		Std. Error Mean	1.24831				
	2	N	68				
		Mean	.3171	.0355	.6383	-1.4193	1.6517
		Std. Deviation	5.36845	-.28541	1.24153	3.29540	6.89851
		Std. Error Mean	.65102				

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
posemo_diff	Equal variances assumed	4.493	.036	2.063	127
	Equal variances not assumed			2.003	91.045

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
posemo_diff	Equal variances assumed	.041	2.82015	1.36728

	Equal variances not assumed	.048	2.82015	1.40788

Independent Samples Test

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
posemo_diff	Equal variances assumed	.11455	5.52576
	Equal variances not assumed	.02360	5.61671

Bootstrap for Independent Samples Test

			Bootstrap[a]		
		Mean Difference	Bias	Std. Error	Sig. (2-tailed)
posemo_diff	Equal variances assumed	2.82015	-.02248	1.38743	.072

	Equal variances not assumed	2.82015	-.02248	1.38743	.070

Bootstrap for Independent Samples Test

		Bootstrap	
		BCa 95% Confidence Interval	
		Lower	Upper
posemo_diff	Equal variances assumed	.51419	5.36993
	Equal variances not assumed	.51419	5.36993

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

10.3.9.3 Social comparison tendency bootstrapped t test, comparing the differing word count in actual and ideal self presentations by level of social comparison tendency

Group Statistics

	Percentile Group of incom_score		Statistic	Bootstrap[a] Bias	Bootstrap[a] Std. Error	Bootstrap[a] BCa 95% Confidence Interval Lower
wc_diff	1	N	66			
		Mean	-43.5152	.3222	9.7081	-64.1723
		Std. Deviation	79.70855	-1.94427	11.39856	58.53185
		Std. Error Mean	9.81144			
	2	N	63			
		Mean	-10.5079	.0371	4.6122	-19.3636
		Std. Deviation	35.80137	-.56895	5.18022	26.04513
		Std. Error Mean	4.51055			

Group Statistics

Percentile Group of incom_score	Bootstrap

			BCa 95% Confidence Interval
			Upper
wc_diff	1	N	
		Mean	-23.3582
		Std. Deviation	95.64192
		Std. Error Mean	
	2	N	
		Mean	-1.3282
		Std. Deviation	43.67061
		Std. Error Mean	

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Independent Samples Test

	Levene's Test for Equality of Variances	t-test for Equality of Means

		F	Sig.	t	df
wc_diff	Equal variances assumed	19.762	.000	-3.009	127
	Equal variances not assumed			-3.057	91.112

Independent Samples Test

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
					Lower
wc_diff	Equal variances assumed	.003	-33.00722	10.96802	-54.71096
	Equal variances not assumed	.003	-33.00722	10.79859	-54.45693

Independent Samples Test

	t-test for Equality of Means

		95% Confidence Interval of the Difference
		Upper
wc_diff	Equal variances assumed	-11.30347
	Equal variances not assumed	-11.55750

Bootstrap for Independent Samples Test

			Bootstrap[a]		
		Mean Difference	Bias	Std. Error	Sig. (2-tailed)
wc_diff	Equal variances assumed	-33.00722	.28510	10.65753	.005
	Equal variances not assumed	-33.00722	.28510	10.65753	.007

Bootstrap for Independent Samples Test

	Bootstrap	
	BCa 95% Confidence Interval	
	Lower	Upper

wc_diff	Equal variances assumed	-54.40478	-11.33473
	Equal variances not assumed	-54.40478	-11.33473

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

10.4 Chapter 6

10.4.1 Impressions of profile holders (from Buffardi & Campbell, 2008).

Think about what impression you have formed of the profile holder from the writing they have provided.

Indicate your agreement by choosing a number between 1 and 7.

To what extent do you think the profile holder is…….

Assertive,

1 2 3 4 5 6 7

Not at all very much

Active

1 2 3 4 5 6 7

Not at all very much

Boring

1 2 3 4 5 6 7

Not at all very much

Confident,

1 2 3 4 5 6 7

Not at all very much

Dominant,

1 2 3 4 5 6 7

Not at all very much

Energetic

1 2 3 4 5 6 7

Not at all very much

Entertaining,

1 2 3 4 5 6 7

Not at all very much

Enthusiastic,

1 2 3 4 5 6 7

Not at all very much

High in status

1 2 3 4 5 6 7

Not at all very much

Important

1 2 3 4 5 6 7

Not at all very much

Inhibited

1 2 3 4 5 6 7

Not at all very much

Intelligent

1 2 3 4 5 6 7

Not at all very much

Outspoken,

1 2 3 4 5 6 7

Not at all very much

Quiet

1 2 3 4 5 6 7

Not at all very much

Reserved

1 2 3 4 5 6 7

Not at all very much

Silent

1 2 3 4 5 6 7

Not at all very much

Withdrawn

1 2 3 4 5 6 7

Not at all very much

Submissive

1 2 3 4 5 6 7

Not at all very much

Affectionate,

1 2 3 4 5 6 7

Not at all very much

Cooperative,

1 2 3 4 5 6 7

Not at all very much

Cruel

1 2 3 4 5 6 7

Not at all very much

Friendly,

1 2 3 4 5 6 7

Not at all very much

Generous,

1 2 3 4 5 6 7

Not at all very much

Grouchy

1 2 3 4 5 6 7

Not at all very much

Hostile

1 2 3 4 5 6 7

Not at all very much

Kind,

1 2 3 4 5 6 7

Not at all very much

Likeable,

1 2 3 4 5 6 7

Not at all very much

Mean

1 2 3 4 5 6 7

Not at all very much

Pleasant,

1 2 3 4 5 6 7

Not at all very much

Quarrelsome

1 2 3 4 5 6 7

Not at all very much

Rude

1 2 3 4 5 6 7

Not at all very much

Stingy

1 2 3 4 5 6 7

Not at all very much

Warm

1 2 3 4 5 6 7

Not at all very much

10.4.2 Final study t tests output

10.4.2.1 SPSS output of t test of self-esteem and agentic and communal impression scores in actual self presentation

Group Statistics

	median split actual_profile_owner_self_esteem	N	Mean	Std. Deviation
actual_profile_agentic_impression_score	1	68	4.0115	.91906
	2	82	4.4390	.90502
actual_profile_communal_impression_score	1	68	4.9605	.82395
	2	82	5.1035	.98359

Group Statistics

	median split actual_profile_owner_self_esteem	Std. Error Mean
actual_profile_agentic_impression_score	1	.11145
	2	.09994
actual_profile_communal_impression_score	1	.09992
	2	.10862

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t
actual_profile_agentic_impression_score	Equal variances assumed	.264	.608	-2.860
	Equal variances not assumed			-2.856
actual_profile_communal_impression_score	Equal variances assumed	2.864	.093	-.953
	Equal variances not assumed			-.969

Independent Samples Test

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
actual_profile_agentic_impre	Equal variances assumed	148	.005	-.42749
ssion_score	Equal variances not assumed	142.082	.005	-.42749
actual_profile_communal_im	Equal variances assumed	148	.342	-.14300

pression_score	Equal variances not assumed	147.981	.334	-.14300

Independent Samples Test

		t-test for Equality of Means	
		Std. Error Difference	95% Confidence Interval of the Difference: Lower
actual_profile_agentic_impressio n_score	Equal variances assumed	.14948	-.72289
	Equal variances not assumed	.14970	-.72342
actual_profile_communal_impres sion_score	Equal variances assumed	.15004	-.43949
	Equal variances not assumed	.14759	-.43465

Independent Samples Test

		t-test for Equality of Means
		95% Confidence Interval of the Difference: Upper
actual_profile_agentic_impression_score	Equal variances assumed	-.13209
	Equal variances not assumed	-.13156

actual_profile_communal_impression_score	Equal variances assumed	.15350
	Equal variances not assumed	.14865

10.4.2.2 SPSS output of t test of agentic and communal impressions formed in actual self presentation by social comparison tendency

Group Statistics

	incom split actual_profile_holder_incom_score	N	Mean	Std. Deviation
actual_profile_agentic_impression_score	1	71	4.3138	1.00243
	2	79	4.1836	.86791
actual_profile_communal_impression_score	1	71	5.1120	.89010
	2	79	4.9728	.93662

Group Statistics

	incom split actual_profile_holder_incom_score	Std. Error Mean
actual_profile_agentic_impression_score	1	.11897
	2	.09765
actual_profile_communal_impression_score	1	.10563
	2	.10538

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t
actual_profile_agentic_impression_score	Equal variances assumed	2.277	.133	.852
	Equal variances not assumed			.846
actual_profile_communal_im	Equal variances assumed	.118	.731	.931

pression_score	Equal variances not assumed			.933

Independent Samples Test

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
actual_profile_agentic_impression_score	Equal variances assumed	148	.396	.13014
	Equal variances not assumed	139.336	.399	.13014
actual_profile_communal_impression_score	Equal variances assumed	148	.354	.13923
	Equal variances not assumed	147.528	.352	.13923

Independent Samples Test

		t-test for Equality of Means	
			95% Confidence Interval of the Difference
		Std. Error Difference	Lower
actual_profile_agentic_impression_score	Equal variances assumed	.15273	-.17167

	Equal variances not assumed	.15391	-.17416
actual_profile_communal_impression_score	Equal variances assumed	.14962	-.15643
	Equal variances not assumed	.14921	-.15563

Independent Samples Test

		t-test for Equality of Means
		95% Confidence Interval of the Difference
		Upper
actual_profile_agentic_impression_score	Equal variances assumed	.43196
	Equal variances not assumed	.43444
actual_profile_communal_impression_score	Equal variances assumed	.43489
	Equal variances not assumed	.43409

10.4.2.3 SPSS output of t test of agentic and communal impressions actual self presentations by self-concept clarity

Group Statistics

	clarity_split_actual_profile_holder_clarity_score	N	Mean	Std. Deviation
actual_profile_agentic_impression_score	1	79	4.1752	.95071
	2	71	4.3232	.91347
actual_profile_communal_impression_score	1	79	5.0082	.90390
	2	71	5.0726	.93141

Group Statistics

	clarity_split_actual_profile_holder_clarity_score	Std. Error Mean
actual_profile_agentic_impression_score	1	.10696
	2	.10841
actual_profile_communal_impression_score	1	.10170
	2	.11054

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t
actual_profile_agentic_impression_score	Equal variances assumed	.070	.791	-.970
	Equal variances not assumed			-.972
actual_profile_communal_impression_score	Equal variances assumed	.461	.498	-.429
	Equal variances not assumed			-.429

Independent Samples Test

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
actual_profile_agentic_impression_score	Equal variances assumed	148	.334	-.14797

	Equal variances not assumed	147.327	.333	-.14797
actual_profile_communal_impression_score	Equal variances assumed	148	.668	-.06439
	Equal variances not assumed	145.257	.669	-.06439

Independent Samples Test

		t-test for Equality of Means	
			95% Confidence Interval of the Difference
		Std. Error Difference	Lower
actual_profile_agentic_impression_score	Equal variances assumed	.15262	-.44957
	Equal variances not assumed	.15229	-.44894
actual_profile_communal_impression_score	Equal variances assumed	.14996	-.36073
	Equal variances not assumed	.15020	-.36126

Independent Samples Test

	t-test for Equality of Means

		95% Confidence Interval of the Difference
		Upper
actual_profile_agentic_impression_score	Equal variances assumed	.15363
	Equal variances not assumed	.15299
actual_profile_communal_impression_score	Equal variances assumed	.23195
	Equal variances not assumed	.23247

10.4.2.4 SPSS output of t tests of agentic and communal impressions in ideal self presentation by self-esteem

Group Statistics

	self-esteem split ideal_profile_owner_self_esteem	N	Mean	Std. Deviation
ideal_profile_agentic_impression_score	1	70	4.6549	.99681
	2	80	5.0056	.84307
ideal_profile_communal_imp	1	70	4.9181	1.03685

ression_score	2	80	5.2330	.88247

Group Statistics

	self-esteem split ideal_profile_owner_self_esteem	Std. Error Mean
ideal_profile_agentic_impression_score	1	.11914
	2	.09426
ideal_profile_communal_impression_score	1	.12393
	2	.09866

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t
ideal_profile_agentic_impression_score	Equal variances assumed	.518	.473	-2.334
	Equal variances not assumed			-2.309

ideal_profile_communal_impression_score	Equal variances assumed	2.736	.100	-2.009
	Equal variances not assumed			-1.988

Independent Samples Test

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
ideal_profile_agentic_impression_score	Equal variances assumed	148	.021	-.35072
	Equal variances not assumed	135.904	.022	-.35072
ideal_profile_communal_impression_score	Equal variances assumed	148	.046	-.31488
	Equal variances not assumed	136.347	.049	-.31488

Independent Samples Test

	t-test for Equality of Means	
		95% Confidence Interval of the Difference
	Std. Error Difference	Lower

ideal_profile_agentic_impression_score	Equal variances assumed	.15024	-.64761
	Equal variances not assumed	.15192	-.65115
ideal_profile_communal_impression_score	Equal variances assumed	.15672	-.62457
	Equal variances not assumed	.15841	-.62813

Independent Samples Test

		t-test for Equality of Means
		95% Confidence Interval of the Difference
		Upper
ideal_profile_agentic_impression_score	Equal variances assumed	-.05384
	Equal variances not assumed	-.05029
ideal_profile_communal_impression_score	Equal variances assumed	-.00519
	Equal variances not assumed	-.00163

10.4.2.5 SPSS output of t tests of agentic and communal impressions in ideal self presentation by social comparison tendency

Group Statistics

	incom split ideal_profile_owners_incom	N	Mean	Std. Deviation
ideal_profile_agentic_impression_score	1	69	4.8476	.91862
	2	81	4.8372	.94813
ideal_profile_communal_impression_score	1	69	4.9006	.89682
	2	81	5.2440	1.00197

Group Statistics

	incom split ideal_profile_owners_incom	Std. Error Mean
ideal_profile_agentic_impression_score	1	.11059
	2	.10535
ideal_profile_communal_impression_score	1	.10796
	2	.11133

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t
ideal_profile_agentic_impression_score	Equal variances assumed	.482	.489	.068
	Equal variances not assumed			.068
ideal_profile_communal_impression_score	Equal variances assumed	.732	.394	-2.195
	Equal variances not assumed			-2.215

Independent Samples Test

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
ideal_profile_agentic_impres	Equal variances assumed	148	.946	.01041
sion_score	Equal variances not assumed	145.540	.946	.01041
ideal_profile_communal_impr	Equal variances assumed	148	.030	-.34348

ession_score	Equal variances not assumed	147.623	.028	-.34348

Independent Samples Test

		t-test for Equality of Means	
		Std. Error Difference	95% Confidence Interval of the Difference: Lower
ideal_profile_agentic_impression_score	Equal variances assumed	.15312	-.29218
	Equal variances not assumed	.15274	-.29145
ideal_profile_communal_impression_score	Equal variances assumed	.15647	-.65268
	Equal variances not assumed	.15508	-.64995

Independent Samples Test

		t-test for Equality of Means
		95% Confidence Interval of the Difference: Upper
ideal_profile_agentic_impression_score	Equal variances assumed	.31301

	Equal variances not assumed	.31228
ideal_profile_communal_impression_score	Equal variances assumed	-.03428
	Equal variances not assumed	-.03701

10.4.2.6 SPSS output of t tests of agentic and communal impressions in ideal self presentation by self-concept clarity

Group Statistics

	clarity split ideal_profile_owners_clarity	N	Mean	Std. Deviation
ideal_profile_agentic_impression_score	1	79	4.5805	.95877
	2	71	5.1329	.81232
ideal_profile_communal_impression_score	1	79	4.9122	1.07314
	2	71	5.2794	.79762

Group Statistics

	clarity split ideal_profile_owners_clarity	Std. Error Mean
ideal_profile_agentic_impression_score	1	.10787
	2	.09640
ideal_profile_communal_impression_score	1	.12074
	2	.09466

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t
ideal_profile_agentic_impression_score	Equal variances assumed	.921	.339	-3.785
	Equal variances not assumed			-3.819
ideal_profile_communal_imp	Equal variances assumed	6.175	.014	-2.356

ression_score	Equal variances not assumed			-2.393

Independent Samples Test

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
ideal_profile_agentic_impression_score	Equal variances assumed	148	.000	-.55246
	Equal variances not assumed	147.505	.000	-.55246
ideal_profile_communal_impression_score	Equal variances assumed	148	.020	-.36717
	Equal variances not assumed	143.110	.018	-.36717

Independent Samples Test

		t-test for Equality of Means	
			95% Confidence Interval of the Difference
		Std. Error Difference	Lower
ideal_profile_agentic_impression_score	Equal variances assumed	.14595	-.84088

	Equal variances not assumed	.14467	-.83835
ideal_profile_communal_impression_score	Equal variances assumed	.15582	-.67508
	Equal variances not assumed	.15342	-.67044

Independent Samples Test

		t-test for Equality of Means
		95% Confidence Interval of the Difference
		Upper
ideal_profile_agentic_impression_score	Equal variances assumed	-.26404
	Equal variances not assumed	-.26656
ideal_profile_communal_impression_score	Equal variances assumed	-.05926
	Equal variances not assumed	-.06391